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the OIL WEEKLY

INTERNATIONAL OIL AUTHORITY

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THE WEEK'S NEWS INTERPRETED

MAR 10 1937

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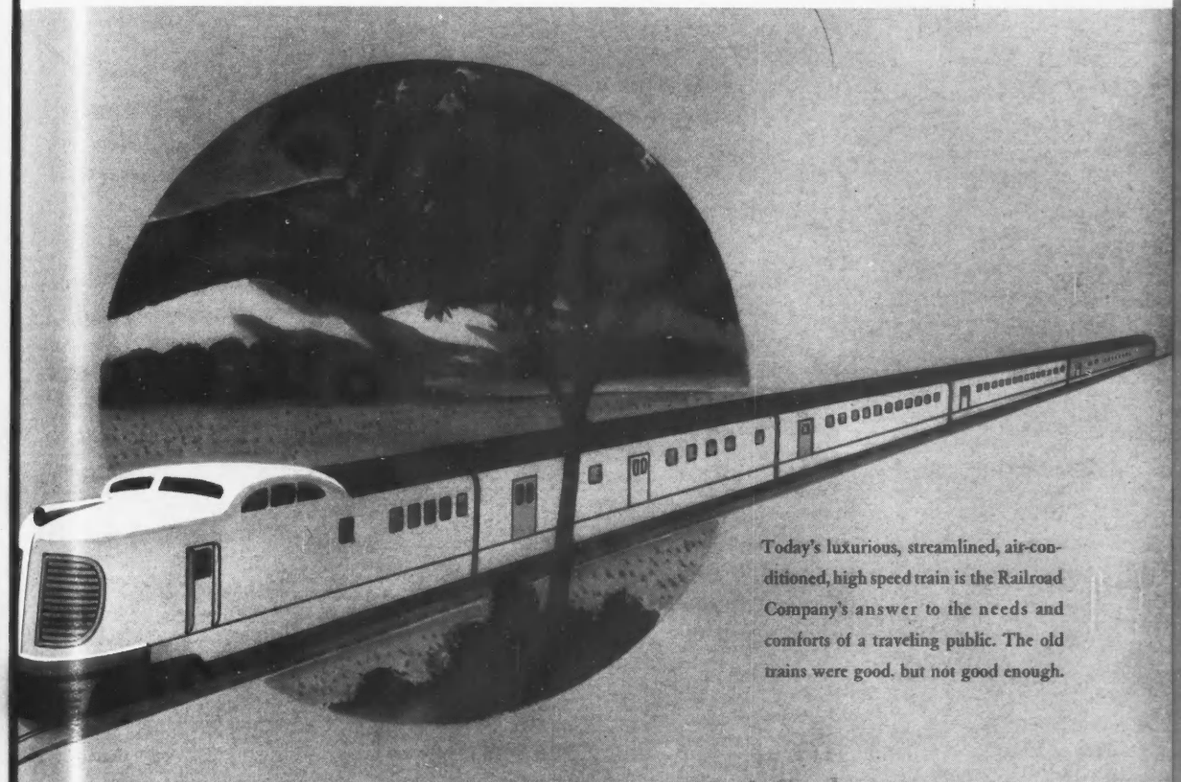

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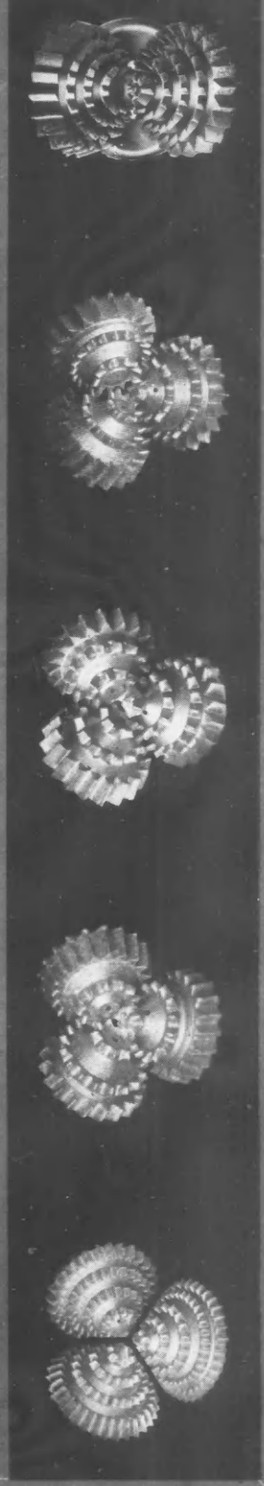

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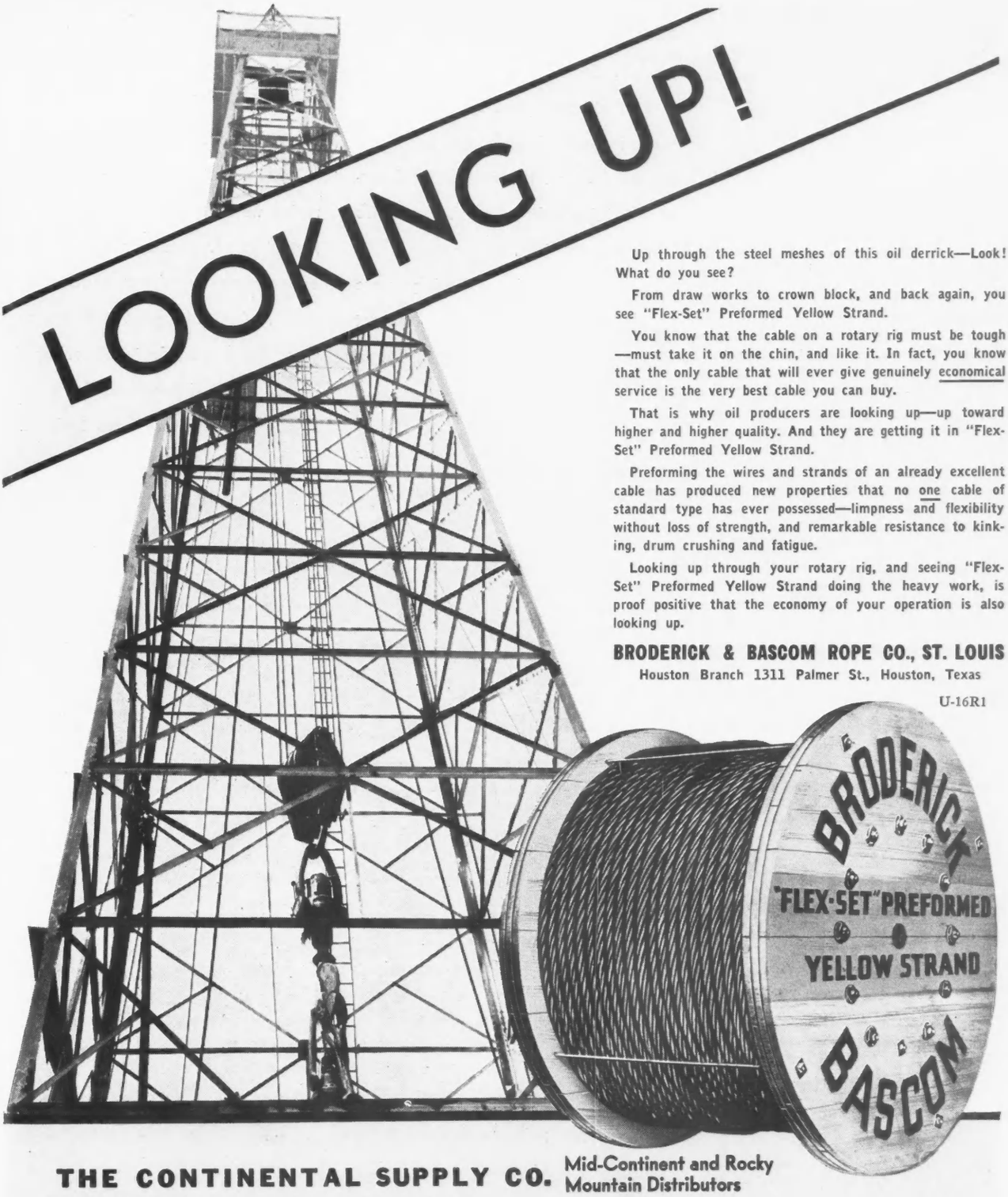

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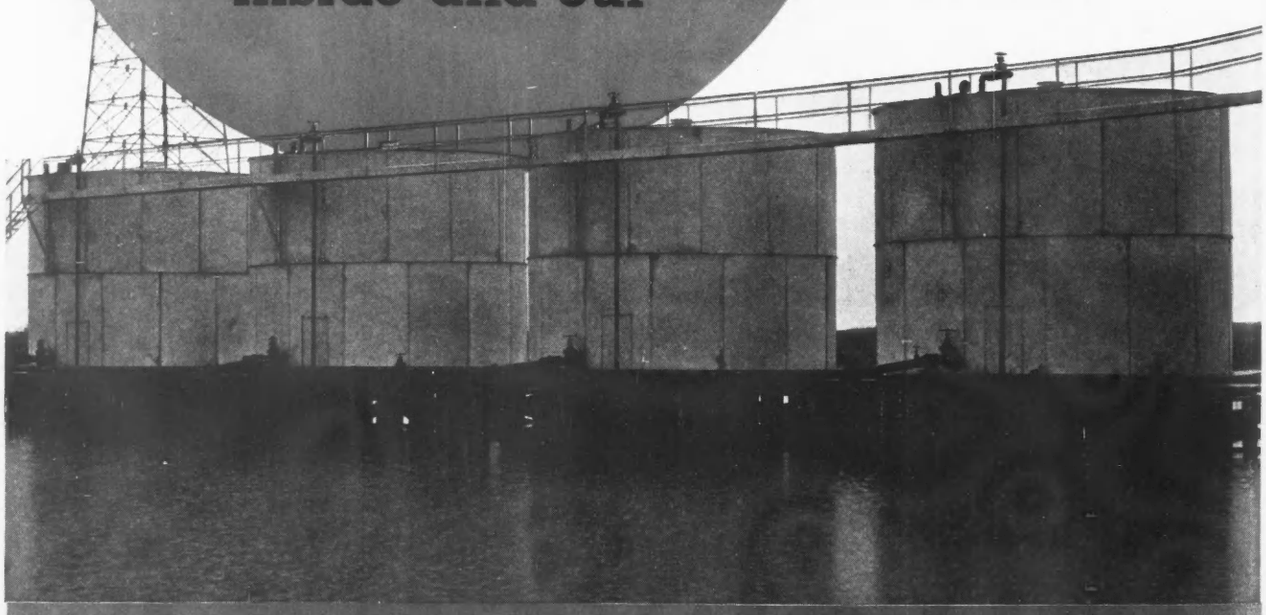

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THE OIL WEEKLY

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The Oil Man's Calendar

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17	**Annual Oil Jubilee, Wewoka, Oklahoma.**
17–19	**American Association of Petroleum Geologists, Los Angeles.**
APR.	
8–10	**Petroleum Industry Electrical Association, Shreveport, Louisiana.**
13	**American Petroleum Institute, Division of Production, Pacific Coast District, Los Angeles.**
15–16	**National Petroleum Association, Cleveland, Ohio.**
26–28	**Western Petroleum Refiners Association, Hot Springs, Arkansas.**
MAY	
6–7	**American Petroleum Institute, Division of Production, Eastern District, Columbus, Ohio.**
10–16	**American Gas Association, Natural Gas Department, Kansas City, Missouri.**
19–21	**Natural Gasoline Association of America, Tulsa.**
23–27	**National Association of Purchasing Agents, (Oil Company Buyers Group), Pittsburgh, Pa.**
JUNE	
1–3	**American Petroleum Institute, Mid-Year Meeting, Colorado Springs, Colorado.**
11	**Interstate Oil Compact Commission, Santa Fe, New Mexico.**
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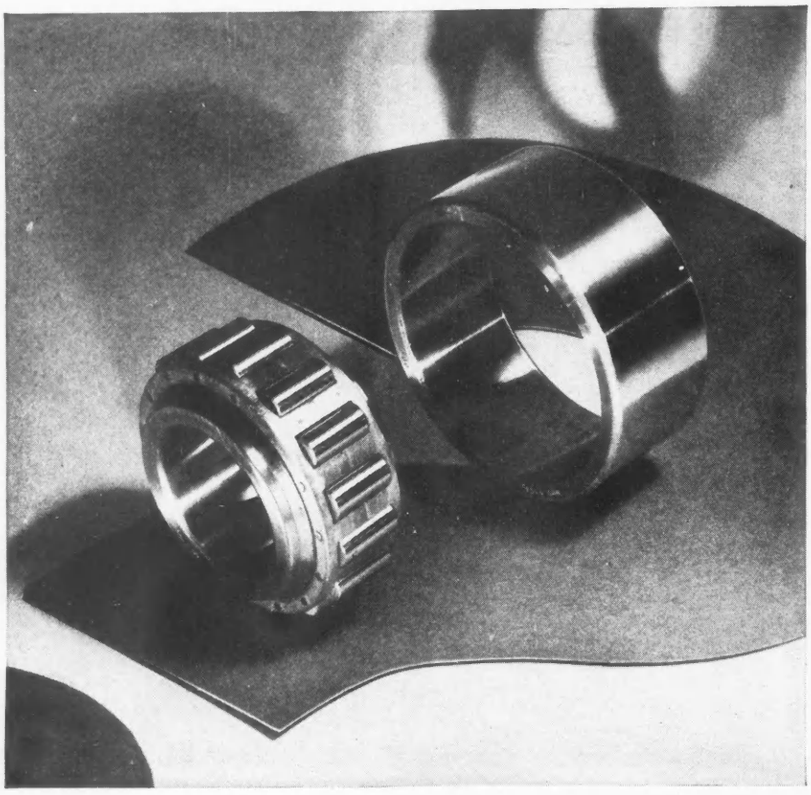

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LOOKING AHEAD

WITH THE EDITOR

THE difficulty lease operators experience in getting to wells located in areas subject to inundation whenever high waters occur, has been solved by one company through construction of walks built on "stilts" of sufficient elevation above flood level. The type of walk constructed and the method used in building the system of walkways is of interest and are to be described and pictured.

LOWER construction costs and a material saving in time have been obtained by German engineers in mining for oil through the adoption of a new method for sinking shafts. The new process was tried under difficult conditions, the site being in lowlands where high water levels and strong seepages existed. By the use of 24-foot standpipe, engineers were able to procure a shut-off without the aid of refrigeration. The story of this interesting operation will appear next week.

THE story of the Fitts field in Oklahoma, a part of which appears in this issue, will be concluded in our next number. So far little has been said about the reserves represented by this field, but our readers are to be told that it accounts for approximately 17 percent of the estimated known producible crude supply still under Oklahoma soil.

ABUSIVE operation and maintenance of equipment is the most serious problem existing in the operating divisions of the petroleum industry today. Annually it robs oil company treasuries of thousands of dollars in actual cash expenditures, takes an uncountable toll of valuable hours of good machinery service performance and represents a vast loss in production because of unnecessary shut downs.

EVELYN CHANDLER, America's Champion Ice Skater

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In anticipation of future demands and to better serve present day requirements Parkersburg now offers Man-Ten Steel Walking Beams . . . definitely superior to any other beam of similar size, and the most economical when figured in terms of service.

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The advantage of this new beam will be readily apparent to operators. Great strength, increased safety and reduced replacement costs make it almost indispensable where well loads are 20,000 pounds or more.

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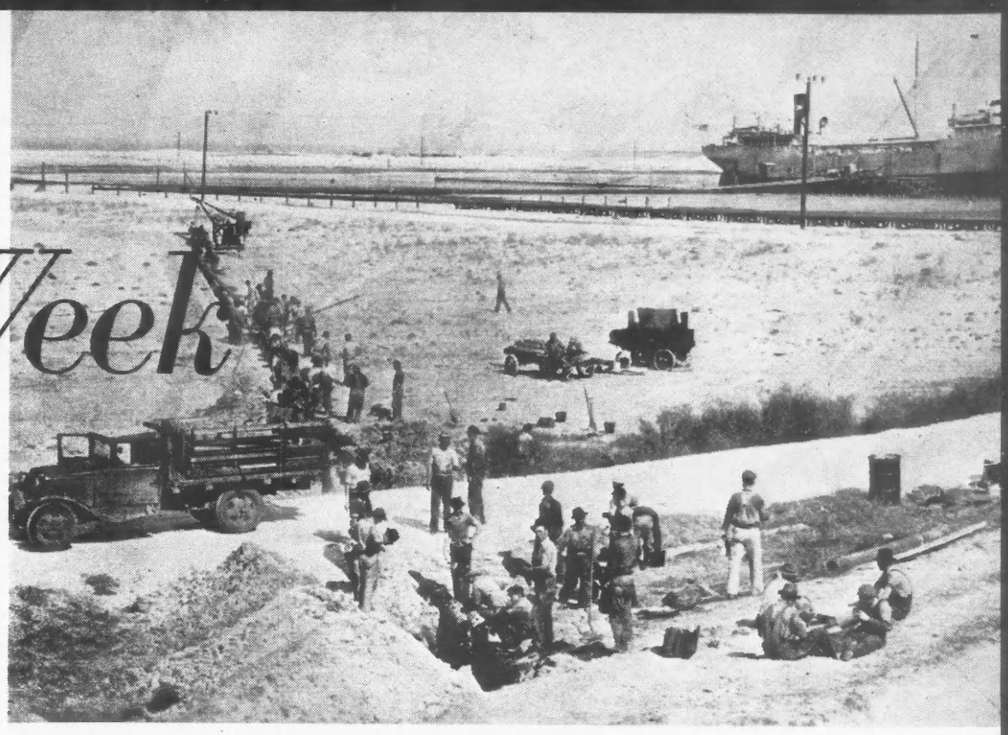
This Week



New South Texas Line

THE newest South Texas oil carrier extends from the Mirando district to tidewater at Corpus Christi. The construction scene here is at the terminus end. The tanker in the background is a French one taking on a cargo of crude oil.

GENERAL conditions during the first two months of 1937 continue so favorable as to surpass the hopes of the most optimistic. Demand for products is running so high it has readily absorbed record well and refinery output. The unprecedented demand has been particularly surprising in that it is coming in mid-winter and despite marking up of prices. Despite all-time record output of crude during February, comparatively little was added to storage. Meanwhile, the only discouraging angle is the growing tendency toward less strict crude control. **Page 12.**

LAST week at Madison, 56 oil men entered pleas of not guilty to charges of conspiracy to violate the anti-trust laws. Ten defendants were excused from appearing until a later date. Whether these men will return to Madison for trial depends upon the ruling on a demurrer challenging the jurisdiction of the court of this district, which was being argued last week. **Page 10.**

THE United States Supreme Court has upheld a Texas statute prohibiting the use of sweet natural gas for the manufacture of carbon black. Validation of this statute provides the Texas Railroad Commission with means for controlling the Texas Panhandle field in so far as sweet gas being used in carbon black plants is concerned. **Page 11.**

ALTHOUGH the first 10,000-foot hole was drilled six years ago, it was not until eight weeks ago that the first commercial producer in the world was completed at that depth. And now, there are four commercial wells below 10,000 feet. Last week a test in the Old Ocean field of Brazoria County, Texas, was completed at 10,263-93 feet. It became the fourth producer in the world below 10,000 feet, the second deepest oil well, and the deepest in the state. **Page 78.**

PREDICTIONS made the past year that Illinois was to receive a revival are certainly coming true. The second important discovery of 1937 for the state was made last week. The first deep test drilled in Clay County is flowing from 75 to 100 barrels daily from 2250 feet and is not yet completely cleaned. Much additional interest and activity is certain to result. **Page 85**

CURRENT SITUATION

Outlook.—Remains promising.

Crude Market.—Firm.

Refined Oil Markets.—Steady, with prices generally unchanged.

Crude Production.—Again at new peak; 3,312,075 barrels daily.

Crude Runs to Stills.—Up 20,000 barrels to 3,085,000 daily in week ended February 27.

Crude Stocks.—Up 42,000 barrels in week of February 13, to 286,158,000 barrels.

Gasoline Stocks.—Up 1,818,000 barrels in week ended February 27, to 76,616,000.

Gas and Fuel Oil Stocks.—Down 215,000 barrels in week ended February 27 to 99,176,000 barrels.

Drilling.—Completions up 52 last week; total 519 wells.

See **MARKET SECTION** *for Details*

THE Fitts field of Pontotoc County, Oklahoma, presents a composite scene of what carefully controlled development may do for a large producing area. Oklahoma's second largest producing field is being developed along engineering ideas that seek the greatest ultimate recovery of crude by the most economical methods known. It is possible that the field will result in the adoption of these new development methods for future discovered Mid-Continent fields. **Page 21.**

IT would seem that there is enough oil for all countries, notwithstanding rising consumption, and normally there would be little apprehension. But it is the possibility of inadequate supplies in time of war that inspires programs for the provision of petroleum and substitute fuels at any cost. These are the statements of Paul L. Hopper, of the Petroleum-Coal Section of the Bureau of Foreign and Domestic Commerce of the United States Government, as he discusses the present expanding international search for petroleum. **Page 38.**

THERE was a time, and not so long ago, that much of the petroleum products produced in California found their way to the Atlantic Seaboard of the United States, but not so today. There has been an important shift in the distribution of California's petroleum products, and today the state is forced to be content with its own local market and shipments westward across the Pacific. **Page 33.**

Anti-Trust Trial

JURISDICTION CHALLLENGED AND 57 PLEAD NOT GUILTY

Madison, Wis.—Fifty-seven executives and employes of major oil companies, who had previously waived their right to determination of legal questions in courts of their own residence, appeared before Federal Judge Patrick T. Stone March 3 and pleaded not guilty to charges of conspirary to violate the anti-trust laws.

Through Attorneys William J. Donovan, New York, and H. H. Thomas, Madison, each of the individuals in turn waived reading of the indictments and their pleas of not guilty were made subject to determination of motions argued before Judge Stone later in the week. Each defendant was permitted to join with his corporation in a general demurrer to the indictments, and other motions.

Coates Called First

First defendant called was Frank R. Coates, New York, vice president of Cities Service Company. As he advanced to the bar, Judge Stone announced:

"Under the rules of this court it has been the practice to take fingerprints of all defendants. I don't think we will take any fingerprints in this case, however, because these are not ordinary defendants."

"Thank you very much," Coates replied.

As each defendant was called, Attorney Thomas entered his waiver and plea of not guilty, and the individual returned to his seat in the crowded courtroom.

Ten Not Present

Ten defendants, facing similar charges in the same indictments, were excused from appearing here until a later date.

The appearance here of so large a group of officials representing one of the nation's major industries was a novelty to this city, the capitol of a state which has never seen an oil derrick. For one day, this city could be called "the oil capitol of the world." For many of the defendants, it was their first visit to Wisconsin.

Challenge Jurisdiction

Whether they will have to return later for trial depends upon Judge Stone's ruling on a demurrer challenging the jurisdiction of the court of this district. Attorney Donovan opened his oral arguments on this motion last week, insisting that if any offenses were committed as charged, they occurred in other districts and a defendant is entitled to trial by a jury in the vicinity of the alleged crime.

The charges grew out of alleged illegal operation of buying pools in the East Texas and Mid-Continent fields by which the retail prices of gasoline were artificially raised and jobbers margins restricted.

In arguing his demurrer, Donovan pointed out that congress recognized the right of individuals to trial in their own districts or in districts in which alleged law violations occurred in the removal statutes. He maintained the defendants could have raised this question in their own districts before coming here for arraignment.

"It is only fair," Donovan said, "that in view of the charges of dilatory tactics made by the government at preliminary hearings, that the defendants be given recognition of the fact that they have come here to raise the question in a court remote from their homes. It is a question that lies at the very basis of a fair trial."

Donovan pointed out that none of the defendants lived in the western district of Wisconsin, nor did any of the corporations have their principal offices here. A trial here, he contended, violates the Sixth Amendment of the Constitution, which provides that persons shall be tried where they reside.

Content Double Jeopardy

The defense attorney also raised the question of double jeopardy, contending that the government indictment merely charged conspiracy to fix tank car prices in the three spot markets—in the East Texas and Mid-Continent fields and Chicago. The government brief, on the other hand, Donovan said charged that this conspiracy was "just a device" to raise retail prices.

"Just what does the indictment really mean?" he asked, adding that he feared the government might place "another and different" interpretation on the indictment at the time of trial. If the indictment can thus be taken to mean two different conspiracies, there would be nothing to prevent the government from bringing other indictments, and thus again jeopardize his clients, Donovan contended.

To support its claim of jurisdiction here, the government claims that an overt act was committed here in that prices paid in this district were influenced directly by "spot tank car market prices" resulting from the alleged conspiracy.

"The fact that the effect will be felt here does not constitute an overt act," Donovan maintained, "and the mere result of a conspiracy can not be an overt act." The government, to establish a conspiracy, must show the existence of an illegal partnership with the purpose of creating a prohibitive and unreasonable restraint of commerce. The defense attorney held that the indictment was limited in scope by the very words charging intent to fix the "spot market" prices.

The effect of such an agreement as charged in Wisconsin could be, at best, only a rhetorical conclusion, he added. In regard to the charge of restricting jobber margins, he argued the indictment containcd no allegation of an agreement to set jobber or dealer prices in Wisconsin or anything to show that any dealer was not free to charge whatever price he pleased.

Donovan announced he would file briefs asking that two defendants, Bernard L. Majewski of Deep Rock Oil Company, and Keith Fanshier of the Chicago Journal of Commerce, be released from their oaths of secrecy taken before the grand jury. Motions to release witnesses, other than defendants, from their grand jury oaths are pending before Judge Stone.

Compared With Standard

Efforts of interests unfriendly to the oil industry to compare the cases pending here to the famous interstate commerce case of 17 years ago in which a fine of $29,000,000 was imposed by Judge Kenesaw M. Landis on Standard Oil Company were killed by government attorneys.

If all corporate and individual defendants were to be found guilty on all the counts in the two general indictments, maximum fines under the anti-trust act would total $1,640,000, government attorneys estimate. The law provides a maximum fine of $5,000 and a maximum jail sentence of one year for each violation. The maximum fine that could be assessed against any corporate defendant would be $20,000.

For the past few weeks, court offiicials here have been busy sorting and numbering some one million documents, weighing 18 tons, in preparation for start of the trial. The documents, which were subpoenaed from the defendant and other oil companies by the grand jury, are being made available to defense counsel to aid them in preparing for trial. Many of the documents are being returned outright to their owners, while others are being released on condition that they are returned 30 days before the trial.

Judge Stone announced Friday he would probably rule on demurrers within 10 days. Further arguments on defense request for bill of particulars and motion to release grand jury witnesses from oaths of secrecy will be heard on a yet unannounced date in April, if demurrers are not sustained and charges not dismissed by the court.

UP TEXAS TAX

Senate is expected to lower six-cent levy

Austin.—The Texas House last week passed a bill by Reed of Bowie providing for a tax of 6 cents per barrel on crude oil, or 6 percent of the value, if the sale price is greater than $1.

This would be substituted for the tax now in effect which levies 2¾ cents per barrel, while oil sells for $1 or less, and 2¾ percent of the value thereafter.

The House voted 86 to 53 for the 6-cent tax, as a substitute for the 10-cent tax which the bill provided originally. Efforts to include higher and lower taxes were defeated as were those amendments intended to place a lower tax on production from stripper wells.

A lower tax is expected from the Senate, and many observers believe that the bill, if finally enacted, would provide for a tax of 4 cents per barrel, or 4 percent of the value, whichever is higher. Senator Will Page indicated that no action would be taken on the bill immediately. He is chairman of the State Affairs Committee which must act on the bill before it is sent to the floor of the Senate.

Affirm Decision

SUPREME COURT UPHOLDS TEXAS SWEET GAS LAW

Washington, D. C.—Validity of the Texas statute prohibiting the use of sweet natural gas for the manufacture of carbon black in the Panhandle field was affirmed by the United States Supreme Court, March 1.

The opinion was rendered following review of a suit brought by The Henderson Company, challenging the act and orders entered thereunder by the Texas Railroad Commission.

The Henderson Company owns and operates a casinghead gasoline plant in the Panhandle gas field which is connected to 21 gas wells; holds oil and gas leases under which some of these wells are operated, and is under contract to take gas from the other wells. Prior to the statute, it received the gas from all these wells at its plant, extracted the gasoline content, and, under contract, supplied the residue gas to Combined Carbon Company.

Under the orders of the Railroad Commission, 14 of the wells were classified as sweet gas wells and the use of gas therefrom for the manufacture of carbon black was prohibited. The company, following issuance of the orders, sought an injunction against enforcement of the statute.

Affirming a decision of the Western Texas District Court, upholding the validity of the statute and the commission's orders, the Supreme Court ruled that the action of the legislature was not arbitrary.

Will Aid Commission

This action was received with smiles in Austin, as it gave the Texas Railroad Commission an assured means of controlling the Panhandle gas field in so far as preventing the use of sweet gas for carbon black is concerned.

"For the first time," said Assistant Attorney General Madden Hill of Texas, "the court has upheld a regulation of gas production in the Panhandle gas field of Texas, and, likewise, for the first time, that court has passed upon a measure designed to protect the coequal rights of common owners in a gas reservoir from which both an inferior and superior natural gas were being produced.

"It was the position of the state that the use of sweet gas produced from the Panhandle and other gas fields of Texas for carbon black manufacture constituted a waste of the natural resources of the state inasmuch as such gas, without processing or treatment, could and was being used for domestic, commercial and industrial uses, for both light and fuel; and at the same time by such restriction a market and opportunity for the owner of sour gas lands would be rendered available, since, by reason of its sulphur content, no market for its use for light and fuel purposes was available.

Discuss Situation

COMPACT, CONSERVATION AND TAXES AT NORTH TEXAS DINNER

Wichita Falls.—The Interstate Oil Compact Commission as being instrumental in pointing the way to general stabilization of the oil industry in the United States plus proration and conservation laws and taxes were the keynotes of the addresses at the seventh annual banquet of the North Texas Oil and Gas Association February 27.

Accomplishments of the program of proration and conservation were disclosed by Colonel E. O. Thompson at the meeting when he said, "The compact commission is in the dark about the amount of crude oil in storage and this a deciding factor in market prices and proration.

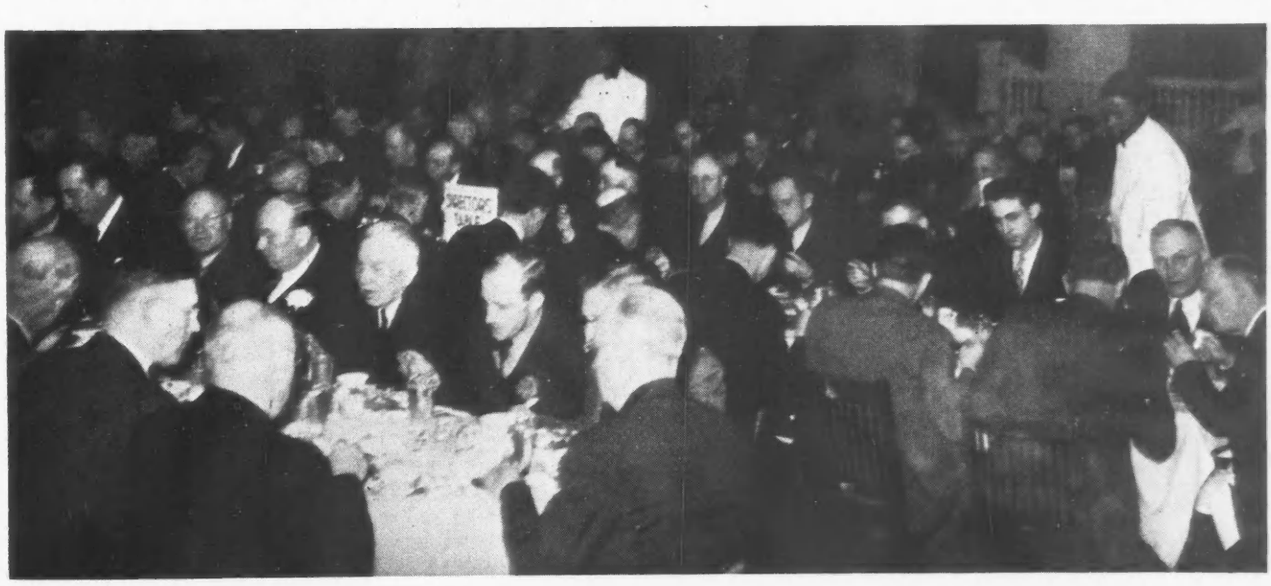
"The scheduled meeting of the compact commission in Oklahoma City on March 12 has been postponed," he said, "until the Bureau of Mines gathers the accurate amount of crude storage and submits it to the commission. Last year the Bureau of Mines was voted $65,000 to gather the statistics and so far has failed to produce any records whatever."

C. V. Terrell, chairman of the railroad commission, summarized the workings of the railroad commission from the period of inauguration in 1891.

[*Continued on page 62*]

Attack Chicken and Taxes

A portion of the 600 oil men of North Texas and Southern Oklahoma in attendance at the seventh annual banquet of the North Texas Oil and Gas Association February 27. After stuffing on chicken and dressing, those present heard discussions on the compact, proration and conservation laws, and attacks on taxes being levied and contemplated for the oil industry.



INDUSTRY retains highly favorable position, as all-time record consumption of petroleum absorbs output of wells and refineries. Inventories remain comparatively low, and markets are firm.

Oil Situation

By L. J. LOGAN

CONDITIONS in the petroleum industry are such that they probably surpass the hopes of even the most optimistic.

The demand for petroleum products has been running so high that it has readily absorbed the output of wells and refineries, even though the field and plant operations have been more active than many believed desirable.

Demand Is Unprecedented

The consumption has continued to increase, establishing records that are the highest in all the history of the industry.

The unprecedented demand for petroleum has come, moreover, in mid-winter; and despite marking up of prices, from well to service station.

The consumption has been pushed higher and higher through a combination of causes. The winter has been comparatively mild, and consequently gasoline consumption has held up well. Fuel oil consumption has continued to grow, reflecting the remarkable increase in the number of installations of domestic and industrial oil burners. Further expansion of industrial activity is promoting large use of fuel oils, lubricants, asphalt, road oil, and other petroleum products.

High Allowables Justified

In the remarkably heavy consumption of petroleum products lies most of the explanation of the favorable situation that the oil industry is enjoying.

The large consumption has nullified circumstances that some years ago would have led to serious trouble. Officials of some of the oil producing states have prescribed crude production allowables that seemed too high, materially exceeding the Bureau of Mines recommendations. Yet there have been ready buyers for the oil, and it has gone not into storage but through the refineries and into the hands of the consuming public. The demand has been out-running the usual conservative expectations. Despite all-time record production of crude oil in February, comparatively little if any was added to storage for the month as a whole.

The crude oil markets consequently remain firm, in the face of the higher postings instituted late in January. There is, indeed, talk of further moderate raising of crude oil prices this spring or summer.

Output of Plants Absorbed

The refineries have been operating at high rates, and many have been carefully watching the inventories of gasoline, in the fear that the stocks

United States Drilling and Production, February, 1937, and Cumulative for Year

STATE OR DISTRICT	MONTH OF FEBRUARY, 1937						CUMULATIVE, JANUARY THROUGH FEBRUARY, 1937					
	*Completions	Oil Wells	Gas Wells	Failures	Initial Prod. Bbls. Daily	Total Bbls. Oil Prod.	*Completions	Oil Wells	Gas Wells	Failures	Initial Prod. Bbls. Daily	Total Bbls. Oil Prod.
Arkansas	4	2	....	2	145	741,150	4	2	....	2	145	1,559,800
California	98	58	....	40	32,210	16,458,200	194	117	2	75	64,907	34,728,800
Colorado	....	....	....	....	.....	109,900	2	....	....	2	.....	219,700
Eastern States	152	34	70	48	629	3,223,200	428	112	206	110	2,101	6,803,050
Illinois	....	....	....	....	.....	.....	....	....	....	....	.....	.....
Indiana	17	5	2	10	27	.....	26	8	3	15	71	.....
Kentucky	4	2	....	2	165	.....	40	24	....	16	893	.....
Ohio	74	17	32	25	381	.....	242	61	124	57	1,006	.....
Pennsylvania	....	....	....	....	.....	.....	7	1	4	2	25	.....
West Virginia	57	10	36	11	56	.....	113	18	75	20	106	.....
Kansas	155	110	4	41	125,044	4,983,700	301	217	10	74	256,429	10,224,800
Louisiana	40	24	6	10	8,787	6,820,750	78	48	10	20	24,076	14,400,950
North Louisiana	15	7	3	5	2,419	2,046,850	26	13	7	6	6,409	4,464,750
South Louisiana	25	17	3	5	6,368	4,773,900	52	35	3	14	17,667	9,936,200
Michigan	42	21	6	15	3,700	858,350	114	47	18	49	9,552	1,762,600
Montana	9	7	1	1	1,065	429,600	16	13	2	1	1,421	942,150
New Mexico	39	35	....	4	64,807	2,713,100	91	83	1	7	133,723	5,576,400
Oklahoma	189	125	16	48	206,301	16,944,000	407	282	25	100	502,272	35,150,800
Southeastern States	5	....	....	5	.....	.....	5	....	....	5	.....	.....
Alabama	....	....	....	....	.....	.....	....	....	....	....	.....	.....
Florida	....	....	....	....	.....	.....	....	....	....	....	.....	.....
Mississippi	5	....	....	5	.....	.....	5	....	....	5	.....	.....
Texas	907	666	31	210	1,076,271	37,065,700	1,860	1,376	63	421	2,030,791	75,879,450
East Texas Field	128	125	....	3	572,290	12,628,950	272	260	....	12	1,148,380	26,531,500
Eastern Texas outside East Texas Field	65	61	2	2	29,329	3,011,900	133	120	4	9	78,910	6,166,150
North Texas	139	65	....	74	11,757	1,875,950	283	138	2	143	22,315	3,899,750
South Texas	247	164	11	72	71,754	6,029,100	522	365	22	135	160,416	11,805,600
Corpus Christi Area	108	76	2	30	50,285	.....	212	161	3	48	104,355	.....
Laredo Area	116	71	9	36	20,017	.....	252	171	19	62	50,881	.....
San Antonio Area	23	17	....	6	1,452	.....	58	33	....	25	5,180	.....
Texas Gulf Coast	80	58	4	18	19,676	5,328,250	176	120	8	48	43,202	10,880,350
Texas Panhandle	42	30	9	3	11,874	2,078,250	83	60	17	6	26,900	4,181,050
West Texas	176	155	....	21	359,262	5,208,200	326	288	2	36	549,058	10,495,150
West Central Texas	30	8	5	17	329	905,100	65	25	8	32	1,610	1,919,900
Wyoming	2	2	....	....	680	1,428,750	12	10	1	1	4,461	2,903,000
Total United States	1,642	1,084	134	424	1,519,639	91,776,400	3,512	2,307	338	867	3,029,878	190,151,500

* February completions cover not the calendar month, but the four weeks, or 28 days, ended February 26.

Exceeds Hopes

Associate Editor

LARGE demand requires highest crude oil production in history, as stocks are held about unchanged. Drilling is in line with the current heavy consumption and production of petroleum.

would expand to such proportions as to result in serious weakening of the gasoline markets. But while the plants have been busy, the motorists, buses, and trucks also have been remarkably active, consuming great quantities of gasoline, and leaving but normal volumes for the oil companies to run into storage for the heavy requirements of spring and summer. The additions to gasoline storage have been well in line with the gains that have occurred in gasoline consumption. Proof of a satisfactory gasoline situation is seen in the fact that tank car, tank wagon, and retail prices are holding steady, at lately improved levels.

Drilling Activity Moderate

Drilling activity has conformed with the generally favorable conditions in the oil industry. Whereas there were some complaints previously that drilling was excessive, February brought a moderate contraction of field work. Well completions per day were about 11 percent lower in February than in January, showing a greater than normal January to February decline. However, the average number of completions per day in February, this year, was 13.6 percent greater than in February last year. This increase was about in line with the gain that has occurred in consumption and production of crude oil.

Crude Control Less Strict

Among the comparatively few darker spots in the picture in oil, one that stands out most prominently is the continuing hazardous and uncertain manner in which allowables are prescribed for balancing the supply of crude oil with demand. Lately, there have been fears each month that the state allowables would result in additions to storage, although they actually have been permitting further withdrawals from storage.

Apparently, the Bureau of Mines has been consistently under-estimating the crude oil requirements month after month.

Consequently, the state conservation officials have begun to give less consideration to the federal bureau's forecasts, and have come to rely more upon the data that they themselves assemble, including nominations of purchasers.

In following their own indications of demand, the different states have exceeded the bureau allocations by rather widely varying percentages.

These differences in excesses over the bureau recommendations, in turn, have tended to promote friction among

United States Crude Oil Production

MONTH	Daily Average (Barrels)	Federal Estimate of Demand
January, 1934	2,233,505	2,183,000
February	2,239,070	2,183,000
March	2,339,950	2,282,800
April	2,420,950	2,366,200
May	2,575,380	2,366,200
June	2,588,100	2,528,300
July	2,560,550	2,530,300
August	2,475,300	2,449,300
September	2,431,950	2,341,700
October	2,364,150	2,325,800
November	2,375,400	2,340,300
December	2,414,600	*2,307,000 †2,460,300
January, 1935	2,500,850	2,460,300
February	2,521,250	2,526,100
March	2,568,800	2,520,300
April	2,559,750	2,527,300
May	2,601,350	2,561,200
June	2,695,100	2,651,000
July	2,707,150	2,660,000
August	2,676,250	2,600,600
September	2,737,750	2,613,000
October	2,780,850	2,554,200
November	2,825,900	2,563,700
December	2,826,850	2,540,200
January, 1936	2,818,300	2,559,200
February	2,774,450	2,648,100
March	2,828,750	2,738,900
April	2,914,600	2,797,300
May	2,976,053	2,826,300
June	2,953,908	2,838,300
July	2,950,522	2,917,200
August	3,029,550	2,936,900
September	3,020,308	2,864,000
October	3,038,132	2,842,300
November	3,020,033	2,870,300
December	3,109,585	2,930,300
January, 1937	3,173,390	2,998,400
February	3,277,728	3,068,600

* December 1-16.
† December 17-31.

Crude Oil Stocks

Bureau of Mines figures as compiled monthly, comprising all crude in storage in the United States.

At End of:	Total Barrels In Storage
October, 1934	346,415,000
November	341,165,000
December	337,254,000
January, 1935	338,174,000
February	337,319,000
March	339,139,000
April	339,793,000
May	338,559,000
June	334,757,000
July	329,351,000
August	324,966,000
September	320,705,000
October	317,155,000
November	315,558,000
December	314,631,000
January, 1936	313,081,000
February	310,812,000
March	313,189,000
April	315,389,000
May	315,169,000
June	311,046,000
July	306,390,000
August	301,757,000
September	295,693,000
October	292,271,000
November	288,998,000
December	288,184,000

Trend of stocks situation since end of December, figures being from weekly reports of Bureau of Mines.

January 30, 1937	285,384,000
February 13	286,158,000

Finished Gasoline Stocks

(Totals reported to the American Petroleum Institute, by companies owning about 90 percent of the country's refining capacity. Actual totals for nation must take into account the additional stocks not reported.)

DATE	Total Barrels Reported
January 26, 1935	47,888,000
February 23	54,399,000
March 2	55,654,000
March 16	†57,406,000
March 30	56,388,000
April 27	55,097,000
June 1	53,180,000
June 29	50,007,000
July 27	48,157,000
August 31	43,787,000
September 28	42,976,000
October 26	41,163,000
November 9	*40,780,000
November 30	43,190,000
December 28	46,472,000
January 4, 1936	47,288,000
January 25	50,368,000
February 1	52,831,000
February 29	60,881,000
March 21	†62,855,000
March 28	62,559,000
April 25	61,638,000
May 30	59,589,000
June 27	57,263,000
July 25	54,087,000
August 29	49,952,000
September 26	47,427,000
October 31	48,579,000
November 21	*47,213,000
November 28	47,897,000
December 26	51,383,000
January 2, 1937	52,603,000
January 30	57,884,000
February 27	65,872,000

* Low point of year.
† High point of year.

the different states, and to cause each state to watch the others suspiciously.

The situation probably would be improved if the Bureau of Mines could more accurately estimate the market demand for each state, and if the state allowables could more closely conform with the bureau allocations.

This improvement in forecasting demand and determining allowables perhaps will be at least partially achieved, however, through the efforts that are now being expended in assembling data on above-ground stocks in the different sections of the country. This work is being carried out by the Bureau of Mines with the cooperation of the various state oil conservation agencies.

March Allowables Liberal

The outlook for this month well illustrates the tendency of the allowables to cause uncertainty. The state allowables for March are such as to permit materially more production than the Bureau of Mines has recommended. But past experience indicates that the bureau recommendations may be exceeded considerably without causing additions to crude oil storage. Nevertheless, it is debatable just how much the bureau allocations may be exceeded with safety. Looking further, it is seen that the six leading producing states in the aggregate propose to exceed the bureau allocations 171,742 barrels daily in March, compared with only 148,296 barrels daily in February, and 111,481 barrels daily in January. They propose to show, in the aggregate, a 5.8 percent excess in March, compared with excesses of only 5.2 percent in February and 4 percent in January. Obviously, the outlook is less favorable for March than for February or January.

Furthermore, crude stocks remained about unchanged in February, or possibly showed a small increase. It is indicated, therefore, that March probably will bring some addition to the stocks of crude oil. If such an increase occurs, it will mark a turning point in the long-sustained decline of crude storage. An increase in crude storage in March would represent, of course, a danger signal.

However, this prospect of an increase in crude storage this month actually may fail to materialize, assuming that the states have been as accurate as in the past in fixing allowables. In such event, any current anxiety would prove to have been unjustified.

State Crude Production Allowables in Six Leading Producing States, Compared With Bureau of Mines Recommendations

(Barrels Daily)

MONTH AND STATE	Bureau of Mines Recommendation	*State Allowable At Beginning Of Month	Excess of State Allowable	Percent Excess
January, 1937:				
California	559,900	†551,000	‡8,900	‡1.6
Kansas	165,600	175,851	10,251	6.2
Louisiana	216,300	240,650	24,350	11.3
New Mexico	79,800	92,800	13,000	16.3
Oklahoma	573,100	573,100	.....	....
Texas	1,176,000	1,248,780	72,780	6.2
Total Six States	2,770,700	2,882,181	111,481	4.0
February, 1937:				
California	573,300	†551,000	‡22,300	‡4.0
Kansas	170,000	187,918	17,918	10.6
Louisiana	225,100	235,700	10,600	4.7
New Mexico	81,600	97,600	16,000	19.6
Oklahoma	581,900	581,900	.....	....
Texas	1,203,400	1,326,478	126,978	10.5
Total Six States	2,835,300	2,983,596	148,296	5.2
March, 1937:				
California	570,900	†551,000	‡19,900	‡3.6
Kansas	178,000	186,968	8,968	5.0
Louisiana	240,000	236,000	‡4,000	‡1.7
New Mexico	88,200	103,200	15,000	17.0
Oklahoma	590,700	620,460	29,760	5.0
Texas	1,256,600	1,398,514	141,914	11.3
Total Six States	2,924,400	3,096,142	171,742	5.8

* Allowable indicates daily average for month in California, Kansas, Louisiana, New Mexico, and Oklahoma; except that Rodessa, Louisiana, field allowable increases with completion of new wells; and New Mexico sometimes is revised at middle of month. In Texas, the allowable is as of the first day of the month, and gradually increases as new wells are completed.

† Recommendation of Central Committee of California Oil Producers.

‡ State allowable under Bureau of Mines allocation.

Excesses of Average Daily Crude Production Above Bureau of Mines Recommendations in Past Six Months

(Barrels Daily)

Note: Production figures calculated from American Petroleum Institute Reports.

MONTH	California	Kansas	Louisiana	New Mexico	Oklahoma	Texas	Other States	United States
September, 1936:								
Production	576,420	163,557	236,353	78,995	571,297	1,157,593	236,273	3,020,308
Demand	535,200	160,000	186,200	71,600	563,000	1,123,900	224,100	2,864,000
Excess	41,040	3,557	50,153	7,395	8,297	33,693	12,173	156,308
October, 1936:								
Production	579,432	161,311	233,893	80,827	566,716	1,181,800	234,153	3,038,132
Demand	535,300	155,000	189,300	74,200	559,900	1,106,900	221,700	2,842,300
Excess	44,132	6,311	44,593	6,627	6,816	74,900	12,453	195,832
November, 1936:								
Production	584,013	160,772	233,785	83,432	566,258	1,151,233	240,540	3,020,033
Demand	549,600	154,500	198,600	75,600	558,400	1,109,300	224,300	2,870,300
Excess	34,413	6,272	35,185	7,832	7,858	41,933	16,240	149,733
December, 1936:								
Production	587,393	170,516	240,566	85,390	581,980	1,204,571	239,169	3,109,585
Demand	553,400	155,900	204,800	78,300	567,000	1,145 200	225,700	2,930,300
Excess	33,993	14,616	35,766	7,090	14,980	59,371	13,469	179,285
January, 1937:								
Production	589,374	169,068	244,523	92,365	587,316	1,252,056	238,688	3,173,390
Demand	559,900	165,600	216,300	79,800	573,100	1,176,000	227,700	2,998,400
Excess	29,474	3,468	28,223	12,565	14,216	76,056	10,988	174,990
February, 1937:								
Production	587,793	177,989	243,598	96,896	605,143	1,323,775	242,534	3,277,728
Demand	573,300	170,000	225,100	81,600	581,900	1,203,400	233,300	3,068,600
Excess	14,493	7,989	18,498	15,296	23,243	120,375	9,234	209,128

Production at New Peak

United States crude oil production averaged 3,277,728 barrels daily in February, the highest daily average in history. It was the third successive month in which a new all-time record was established. The output was 104,338 barrels a day greater than in January and 168,143 barrels a day higher than in December. The total production in the 28 days of the month was 91,776,400 barrels, it is indicated by the weekly reports of the American Petroleum Institute.

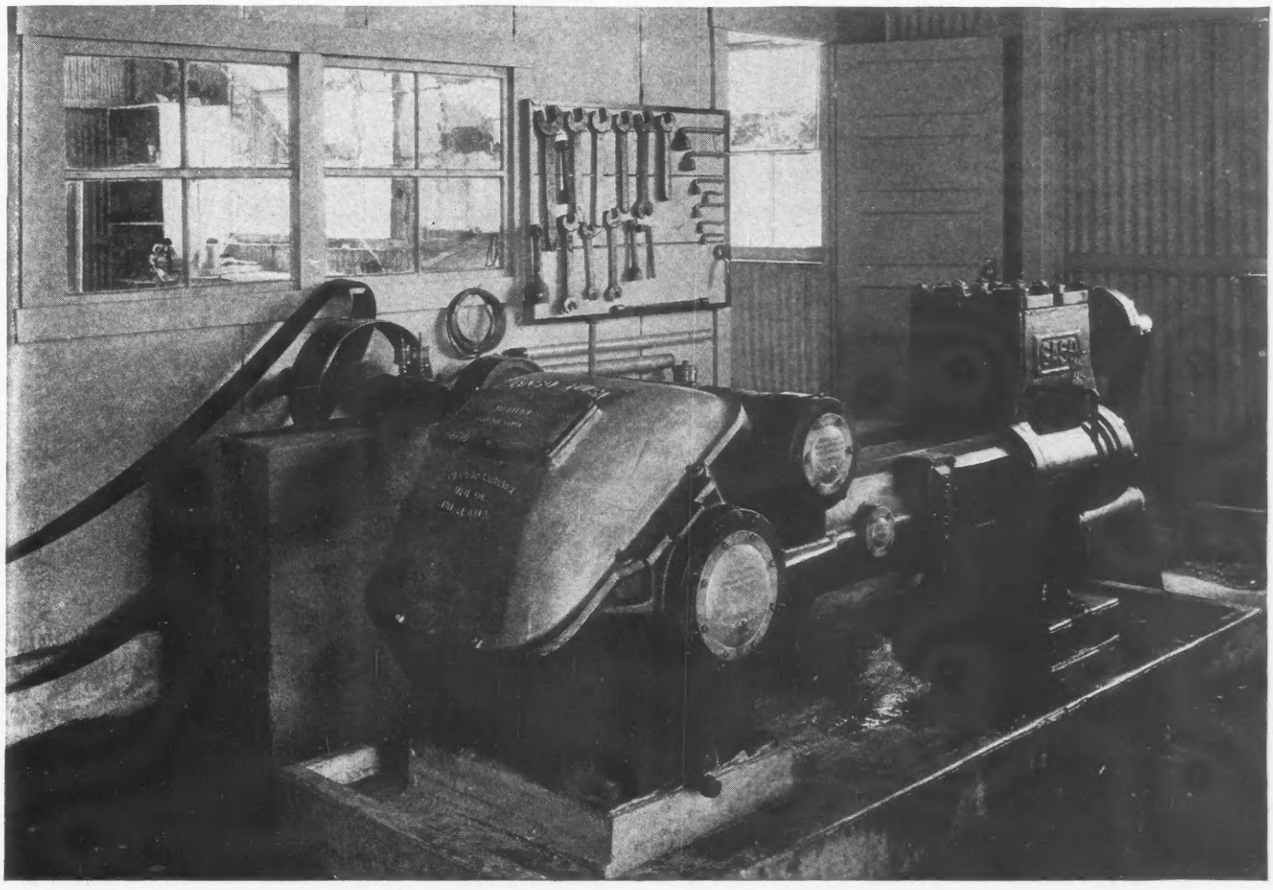
The February production was 209,128 barrels a day higher than recommended by the Bureau of Mines, compared with excesses of about 175,000 barrels daily in each of the two preceding months.

In the first two months of this year the total crude production was 190,151,500 barrels, or 13.3 percent more than in the similar period last year. Since crude oil stocks have decreased slightly since the beginnig of this year, while fluctuations in refined oil stocks have been about normal, it is indicated that petroleum demand, similarly, is running around 13 percent higher this year than last year.

Crude Stocks About Same

Crude oil stocks at the end of February probably were not greatly changed from the beginning of the month. From January 30 to February 13 the nation's crude stocks increased about 800,000 barrels, or to 286,158,000 barrels, according to the Bureau of Mines. Although figures are

CONTINUOUS OPERATION WITH TIMKEN BEARINGS



Gaso Pump manufactured by the Gaso Pump and Burner Manufacturing Company, Tulsa, Oklahoma, equipped with TIMKEN Bearings on the crank shaft and pinion shaft—key points.

The most important of all requirements in oil field equipment is ability to operate continuously with the least possible attention. First to feel the effects of continuous operation are the bearings. Upon them fall the main responsibilities of high speeds and heavy loads. The bearings in the equipment you buy therefore are key points of endurance and long equipment life.

When you find TIMKEN Bearings dominating the bearing situation in any kind of oil field equipment—as you will in most of the leading makes —you can take it for granted that ample provision has been made throughout the machine for dependable performance under continuous maximum duty operation.

With their threefold protection — against friction, radial-thrust loads and misalignment of moving parts—TIMKEN tapered roller bearings are equally valuable factors of low operating and maintenance costs. You need them in your equipment. It will pay you to see that you get them.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

Manufacturers of Timken Tapered Roller Bearings for automobiles, motor trucks, railroad cars and locomotives and all kinds of industrial machinery; Timken Alloy Steels and Carbon and Alloy Seamless Tubing; and Timken Rock Bits.

TIMKEN TAPERED ROLLER BEARINGS

United States Drilling and Production in First Two Months of 1937 and 1936

STATE OR DISTRICT	WELLS COMPLETED			BBLS. OF CRUDE PRODUCTION		
	In 1937 (2 Mos.)	In 1936 (2 Mos.)	Percent Change	In 1937 (2 Months)	In 1936 (2 Months)	Percent Change
Arkansas	4	14	— 71	1,559,800	1,790,300	— 13
California	194	179	+ 8	34,728,800	38,118,436	— 10
Colorado	2	.....	.....	219,700	237,850	— 8
Eastern States	428	421	+ 2	6,803,050	6,133,200	+ 1
Kansas	301	177	+ 70	10,224,800	8,381,850	+ 22
Louisiana	78	122	— 36	14,400,950	11,160,550	+ 29
North Louisiana	26	68	— 62	4,464,750	3,283,800	+ 36
South Louisiana	52	54	— 4	9,936,200	7,876,750	+ 26
Michigan	114	109	+ 5	1,762,600	2,311,850	— 24
Montana	16	15	+ 7	942,150	774,350	+ 22
New Mexico	91	57	+ 60	5,576,400	3,463,250	+ 61
Oklahoma	407	381	+ 7	35,150,800	30,089,550	+ 17
Southeastern States	5	.....	.....	.....	.....	.....
Texas	1,860	1,499	+ 24	75,879,450	63,286,350	+ 20
East Texas Field	272	395	— 31	26,531,500	26,036,750	+ 2
Rest of East Texas	133	44	+202	6,166,150	2,791,550	+121
North Texas	283	254	+ 12	3,899,750	3,397,800	+ 15
South Texas	522	359	+ 45	11,805,600	*4,131,400	+ 35
Texas Gulf Coast	176	137	+ 28	10,880,350	*12,637,400	
Texas Panhandle	83	97	— 17	4,181,050	3,514,800	+ 19
West Texas	326	160	+104	10,495,150	9,262,800	+ 13
West Central Texas	65	56	+ 16	1,919,900	1,513,850	+ 27
Wyoming	12	5	+140	2,903,000	2,028,600	+ 43
Total United States	3,512	3,012	+ 16.6	190,151,500	167,776,136	+ 13.3

* Production in fields of Corpus Christi district, now included with South Texas, shown in Texas Gulf Coast in 1936.

not available for the closing portion of the month, crude production declined somewhat, indicating that meanwhile some oil probably came out of storage, partially or wholly canceling the increase of the first half of the month.

The industry is in an especially advantageous position with regard to crude oil inventories, the stocks being at the lowest proportions for many years. The stocks at present are about 25,000,000 barrels lower than one year ago.

Total stocks of all oils in the United States are the lowest for 13 years, or since March 31, 1924. In terms of supply at the existing rates of consumption, the total inventories are the smallest for over 16 years, or since November, 1920. The total stocks amounted to 518,433,000 barrels, or 146 days' supply, on January 1, latest date for which figures are available.

Gasoline Stocks Increase

Gasoline stocks increased in February about 8,000,000 barrels, or about the same as in February of each of the two preceding years. Companies with about 90 percent of the nation's refining capacity reported to the American Petroleum Institute that they had on hand 65,872,000 barrels of finished gasoline February 27, compared with 57,884,000 barrels January 30. Those stocks at the end of February were 8.2 percent higher than one year previously. Such an increase appears justified, however, in view of the gain that has occurred in the consumption of gasoline. The Bureau of Mines has estimated that the domestic demand for motor fuel in March will be 9 percent above the actual of March, last year.

The domestic demand for gasoline in all of 1936 was 10.8 percent greater than in 1935. That increase reflected a large increase in motor vehicle registrations (from 26,200,000 to 28,200,000), and also the continued upward trend of motor fuel demand per vehicle. Demand this winter has been favorably influenced, moreover, by the unusually mild weather, particularly along the Atlantic Coast, where nearly one third of the gasoline is consumed.

Wells Completed in the United States

(Including Oil Wells, Gas Wells, and Dry Holes)

MONTH	Daily Average
January, 1933	30.0
February	30.6
March	26.6
April	25.5
May	25.6
June	21.1
July	23.1
August	30.7
September	36.5
October	40.9
November	46.9
December	47.7
January, 1934	39.7
February	38.1
March	40.6
April	44.0
May	50.7
June	51.5
July	53.6
August	51.3
September	43.2
October	49.6
November	49.9
December	48.3
January, 1935	47.9
February	49.6
March	48.8
April	58.5
May	63.6
June	58.6
July	60.9
August	62.8
September	57.9
October	57.1
November	55.2
December	54.2
January, 1936	52.4
February	51.6
March	60.6
April	69.2
May	*71.9
June	70.9
July	66.6
August	70.4
September	65.4
October	67.8
November	67.7
December	67.7
January, 1937	66.1
February	58.6

* Highest since July, 1930, when completions averaged 76.6 daily. Average dropped in August, 1930, to 52.4 and remained below that figure until July, 1934.

February brought customary withdrawals from fuel oil storage, although less than February of last year, when unusually cold weather caused extraordinary consumption of the burning oils. The nation's fuel oil inventories came down nearly 3,000,000 barrels in February, leaving the total 99,176,000 barrels February 27. In February last year the stocks were reduced 7,651,000 barrels, or to 95,856,000 barrels.

Drilling Curtailed

The contraction of drilling in February, this year, brought the daily average of completions down to 58.6 wells daily, compared with 66.1 wells a day in January. The February average was, however, 13.6 greater than that of February last year.

In the first two months of this year completions in the United States totaled 3512 wells, or 16.6 percent more than in the similar period of last year.

Most of the states and districts are experiencing more drilling this year than last year, although the increases vary widely. The exceptional areas where drilling is lower this year include Arkansas, North Louisiana, South Louisiana, the Texas Panhandle, and the East Texas field. In the latter area drilling is running 31 percent lower than last year, as new drilling becomes attractive in the big field.

The greatest increase in drilling has occurred in Eastern Texas outside the East Texas field, where completions are running three times as heavy as last year. That gain partially reflects development of the Texas portion of the Rodessa field, Talco field, and wildcat areas.

The next largest increase among the major areas has been that in West Texas, where completions are running twice as numerous as last year. Wyoming also has had an increase of over 100 percent in drilling, compared with last year.

Kansas, too, has had a noteworthy expansion of drilling, with completions running 70 percent above last year, while New Mexico has had nearly as large an increase, amounting to 60 percent.

South Texas had 45 percent more completions in the first two months of 1937 than in the similar period last year, and the Texas Gulf Coast 28 percent more.

For Texas as a whole, 1937 drilling has run 24 percent above that of 1936.

Increases have been less than 20 percent in California, the Eastern States, Michigan, Montana, Oklahoma, North Texas, and West Central Texas.

Several wells have been drilled in the first two months of this year in Colorado and Mississippi, where there were no completions in the similar periods last year.

CURTAIL IMPORTS

Italy is producing more gasoline in home plants

Petroleum import licenses will be materially curtailed during 1937 by Italy's petroleum control board, due to an estimated domestic production of 275,000 tons of gasoline during 1937, or considerably more than has been produced in any year in Italy.

Consumption of gasoline in Italy is estimated at 550,000 tons per year currently, and in this connection it is believed gasoline imports will be cut at least 100,000 tons and crude import licenses 30,000 tons.

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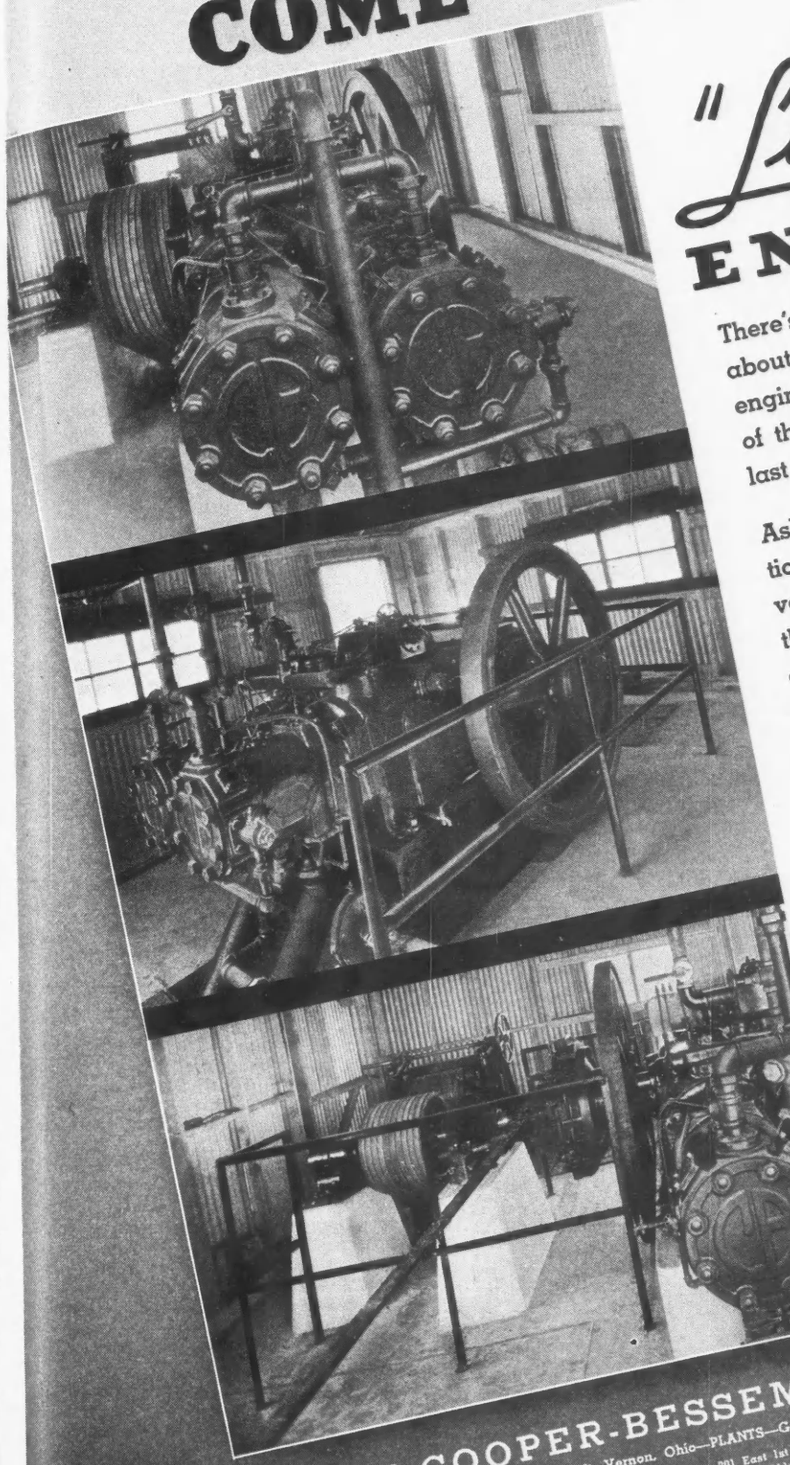
There's nothing frail nor feeble about Cooper-Bessemer pumping engines. They are the "work horses" of the oil fields. They are built to last a lifetime!

Ask to see the "lifetime" specifications of Type GA; for example, the very strong and rigid main frame — the Timken main roller bearings, oversize — the die-forged crankshaft — the drop-forged connecting rods. Then you'll understand why these engines are the "tops" — for convenience, reliability, and economy!



EAST TEXAS — The three Type GA twin-cylinder gas engines shown here are each rated 100 H.P. at 300 r.p.m. They are "lifetime" engines for driving geared pumping powers.

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Magnolia Building, Dallas, Texas
Esperson Building, Houston, Texas
53 Duncan Street, Gloucester, Mass.

MEN IN THE INDUSTRY'S NEWS

W. G. SKELLY SUCCEEDS H. P. GRIMM AS PRESIDENT OF PACIFIC WESTERN OIL CORPORATION

SKELLY WILL CONTINUE TO BE THE HEAD OF SKELLY OIL COMPANY

WILLIAM GROVE SKELLY, president of Skelly Oil Company, has been elected president and director of Pacific Western Oil Corporation. He succeeds H. P. Grimm, resigned. The election of Skelly to the head of Pacific Western Oil Corporation will not affect his position as president of Skelly Oil Company. Mission Corporation, which holds about 55 percent of the common, or control, of Skelly Oil Company, has about 45 percent of the stock of Pacific Western Oil Corporation.

W. G. SKELLY

W. A. DELANEY, R. W. Simpson and S. C. Boswell and families, all of Ada, Oklahoma; E. Stahl and family of Oklahoma City, and W. R. McCluskey and family of Kansas City, Missouri, are a party of Mid-Continent operators now touring South American ports. The group is making a 60-day trip down the west coast of the continents, across South America and up the Atlantic seaboard.

JAMES HALL, Tampico, Tamaulipas, for many years with The Texas Company in Mexico, is visiting in Texas Company headquarters in New York.

DARWIN BENEDUM, geologist responsible for the discovery of the new Sweden oil field in Duval County, Texas, and his brother, J. C. Benedum, have opened offices in the Milam building, San Antonio.

G. L. KOTHNY, vice president and general manager of Sperry-Sun Well Surveying Company, Philadelphia, was in Houston this past week following an extended trip to California.

M. B. STEPHENSON, former professor at the Louisiana State University, has moved from Baton Rouge to Fort Worth to become paleontologist for Sinclair Prairie Oil Company in the Fort Worth division.

L. L. FOLEY, petroleum engineer with Ohio Oil Company at Tulsa, has resigned, effective March 15, and will become a consulting geologist and petroleum engineer. He will continue to make Tulsa his home.

J. D. WHEELER, petroleum engineer in the Yates pool for Ohio Oil Company, was a visitor in the Tulsa offices of the firm last week.

DON CHAPELL, head geologist for Shell Petroleum Corporation in the Ardmore district, is spending some time in the Tulsa offices.

ELMO D. MURPHEY, safety engineer for Mid-Continent Petroleum Corporation, spoke to members of the engineering school at the University of Tulsa March 1. His subject was "Explosion Hazards." The talk was one in a series of similar topics to be discussed during the year, and which are sponsored by the Mid-Continent Safety Council. Students at Oklahoma University and Oklahoma A. & M. College will hear the same talks.

J. B. KELSEY, father of Dana H. Kelsey, celebrated his 99th birthday recently. The elder Kelsey is believed to be the oldest living retired oil man, having been connected for many years with the old Prairie Oil and Gas Company. John D. Rockefeller, who is now 97 years old, claimed the honor until he made the acquaintance of Kelsey.

COLONEL NELSON SPENCER, Stanley Burke, Senator J. W. deB. Farris, A. L. Hager, Major E. H. B. Ker, Major J. R. Lowery, W. H. Malkin, Brigadier General Victor W. Odlum, General J. W. Stewart, all of Vancouver, and M. W. Doherty of Toronto and E. Gerald Hanson of Montreal were the new directors of Home Oil Company, recently elected by stockholders in Vancouver, British Columbia.

GEORGE W. TILLEY, 73, deputy supervisor of the oil and gas division of the Texas Railroad Commission in North Texas for 12 years, died suddenly February 27 at his Olney, Texas, residence.

L. B. LANCASTER, 53, president of Tex-Mex Petroleum Corporation, discoverer of the Netterville field, Pecos County, Texas, died February 26 at his recently completed Midland residence after being stricken with pneumonia. Survivors include his widow and a daughter, Mrs. George T. Abell.

FRED K. HASKELL HAS RESIGNED AS MANAGER OF EMPIRE PIPELINE COMPANY TO ENGAGE IN OIL BUSINESS INDEPENDENTLY

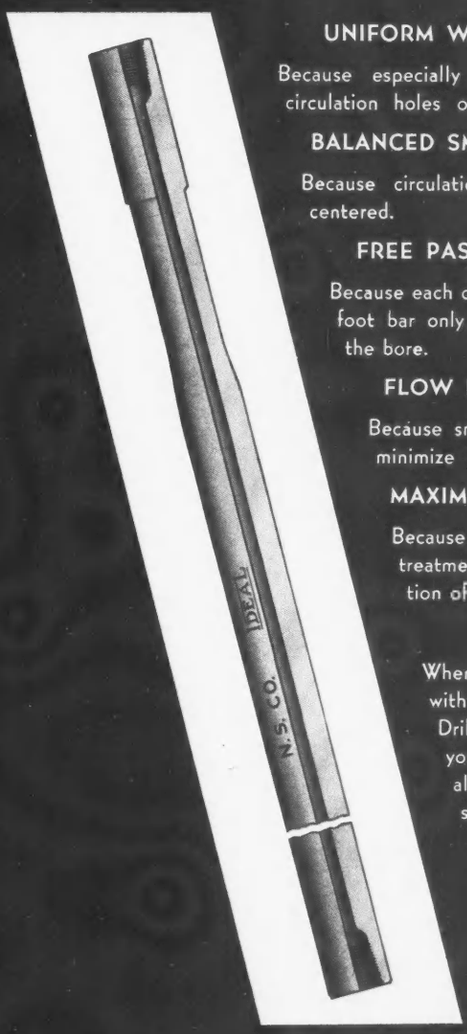
WILL ESTABLISH HIS HOME AND BUSINESS AT SAN ANTONIO, TEXAS, AFTER APRIL 1

FRED K. HASKELL

FRED K. HASKELL, manager, Empire Pipe Line Company, vice president of The Texas-Empire Pipe Line Company of Oklahoma and The Texas-Empire Pipe Line Company of Texas, at Bartlesville, Oklahoma, has offered his resignation, effective April 1, to become an independent oil operator with headquarters at San Antonio, Texas. Haskell, associated with the Empire Companies for the past 20 years, professed to a longing for independent work that has been with him for a good many years. The heavy load of taxes already being carried by oil men and companies in this state, and the number now under consideration, aided Haskell in determining that the time had arrived to strike out for himself, in a locality where conditions were more favorable. He will leave Bartlesville April 1 and will estab-

[*Continued on page 62*]

DRILL COLLARS
DRILL STEMS



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Because especially built machines bore circulation holes on true geometric axis.

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Ideal Alloy Drill Collars and Upset Drill Stems are available in popular sizes at points convenient to all active fields.

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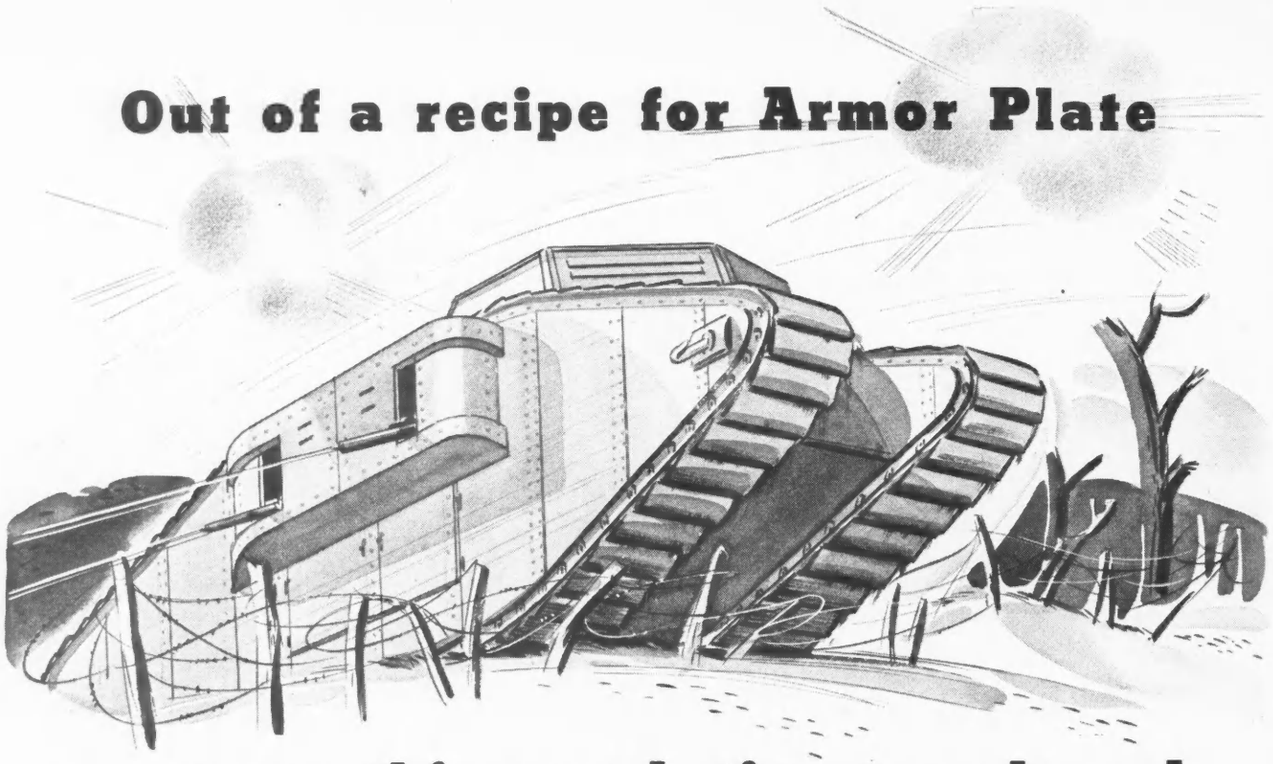
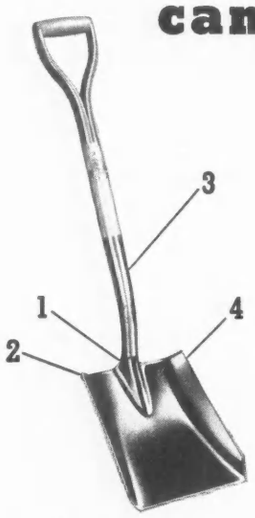
Out of a recipe for Armor Plate



came this revolutionary shovel



1. *Closed Back* . . . smooth back, unrivaled strength of one-piece design... new simplicity of handle replacement.
2. *Turned Shoulder*...strengthens blades, saves shoes.
3. *Tapered Socket* . . . strong and solid, fits the hand . . . designed for proper hang.
4. *Heat Treating*...makes high grade steels hard, to resist wear.

Shortly after the war we learned how Molybdenum, added to armor steel, made it possible for tanks to keep weight down, yet stand up under powerful enemy projectiles.

This gave us the idea . . . of a Molybdenum steel shovel. We experimented, and the result far surpassed our most optimistic hopes. The WOOD'S (Moly) Shovel was the first tool ever to be made of Molybdenum steel... and it completely revolutionized all previous standards of shovel life and shovel wear.

Today, the WOOD'S (Moly) Shovel remains the finest shovel money can buy. Not only does it contain more than double the Molybdenum of similar shovels, but by actual tests it wears five times longer than the ordinary shovel. It stands up under the most grueling tasks, keeps its shape and stays sharp and keen for much greater periods of time. This means that it actually saves you money.

Moreover, the WOOD'S (Moly) like Big Fist and other noted WOOD'S brands, features the exclusive Closed Back design, the turned shoulder and tapered socket . . . features that make the shovel easier to use and easier to maintain.

Once you use a WOOD'S (Moly) you'll never be satisfied with less. Why not get complete details? Simply write THE WOOD SHOVEL & TOOL COMPANY, PIQUA, O.

WOOD'S (Moly) SHOVELS

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FITTS FIELD DEVELOPMENT

A Composite Scene of Controlled Operations

By FRANK TAYLOR, Staff Writer

FITTS pool of Pontotoc County, Oklahoma, holds the dominant position in field operation of the northern Mid-Continent. The pool ranks second to Oklahoma City (including Mansion area) in daily production, at present putting into transmission lines about 82,000 barrels of crude daily produced from more than 600 wells. Total production from the field to date is about 31,998,560 barrels, all of which might be considered as being the yield obtained through a normal development. It has only been within the past two months that operations at the easterly extremity of production have definitely established the edge of productivity.

The pool is enclosed within Franks graben, a geologic feature that is apparent upon the surface. Structurally, the field is a characteristic anti-cline, with normal structural dips occurring to the east and north of the pools center.[1] Limiting production to the south and southwest are two major faults. Fitts pool is now 6 miles in length by approximately 1½ miles across production in a north and south direction. Commercial production has been proven for 4940 acres in sections 25, 26, 35, 36-2n-6e; 19, 20, 21, 22, 23, 26, 27, 28, 29, 30, 31, 32, 33-2n-7e. The greater share of this acreage will be productive from not one horizon, but most probably from a minimum of five strata. There is every reason to believe that future expansion of the limits of the field will be through the following out of present known trends of production, and not through the finding of a major extension. This is the opinion prevalent among those who have made a study of local geology, and it is supported by the evidence of well logs.

Influences Drilling

Aside from the fact that the reserve of Fitts pool constitutes a vital share of the Mid-Continent reserve, the discovery and development of Fitts has been instrumental in aiding the industry in two other equally important respects. The first of these is reflected in increased wildcat activities throughout South Oklahoma. Up to 1937 results of variously located tests had not been encouraging. Some shows had been encountered at shallow depths, but no major findings are recorded. There is considerable structural evidence in the region proven to have possibilities by the opening of Fitts, although the general opinion previously existed that there was no retention of accumulation due to extreme faulting. The disproval of this estimation of the area, together with a greater knowledge gained since Fitts started active development, will mean more tests for the future for Pontotoc, Coal, Pittsburg and Atoka Counties.

New Operating Problems

A second major influence exerted by Fitts field development has been the adaption of methods new to Mid-Continent practice. Certain specific problems were encountered in Fitts drilling to make pressure drilling desirable, and to require the use of special cementing methods. In the realm of production, the lime strata have been treated with exceedingly high volumes of acid; in some cases at intervals, to establish a new technique. Due to the number of pay horizons, existing from 700 feet to 5000 feet, strata have been grouped for production control. This practice will greatly aid in sustaining reservoir energy

SECOND in volume of production and the newest important development in Oklahoma, the Fitts field is not only most interesting geologically (as was discussed in The OIL WEEKLY for March 1, 1937, page 18) but its development of multiple producing horizons under strict rules of conservation is most interesting. This control has been under supervision of engineers seeking the most profitable ultimate recovery and profit, and of state authorities interested in both conservation and stabilization.

The accompanying discussion is in two parts. The second will appear in an early issue.

and will very probably lead to a relatively high ultimate recovery. The multiplicity of productive members of the pay formations also has made it necessary to drill twin and triple wells, with serious consideration being given the drilling of 4 and 5 wells on particular locations to produce from all pay strata of the field. There is little question but that the present drilled program is sufficient for the major members of the Simpson and Hunton, but a plugback or another well would be necessary to produce from the more shallow pay horizons.

Fitts pool is now entering the advanced stage of operation, with most future drilling scheduled to round out programs that are already outlined. The present number of wells will be considerably increased and most of the newer locations will be in the west and extreme southwest, and the east tenth of the pool. Already, the total drilled footage in the field exceeds 2,500,000 feet, equalling a total well investment of $28,860,000. Both of these figures will be increased by about 45 percent in the next five years. A large increase is planned for surface equipment. This will include pipe lines, stations, gas compressors, power lines, structures and pumping units. The position held at this time by Fitts pool is one that is well deserved through activity, development and expected ultimate recovery.

Historically

Of all those interested and who had a part in the early wildcatting that finally lead to the opening of Fitts pool, not one devoted more time to the problem, nor was more positive of the existance of a major oil pool, than was John Fitts. Fitts, geologist of Ada, was born in Georgia, October 28, 1879; and came to South Oklahoma in 1900. Through study of local conditions, Fitts became thoroughly acquainted with the geology of the area, and from 1916 continually argued for explorative effort that was finally to lead the discovery of Fitts pool. In his opinion, the most indicative well in the area prior to actual discovery was drilled in 35-1n-8e in 1927 but found salt water. This failure did not find the sulphur water which is prevalent in the vicinity. Instead, the salt water encountered lead Fitts to conclude that sulphur water intrusion had been halted by some condition, and that by the same reason it was probable that if oil had accumulated that it had not drained through fractures.

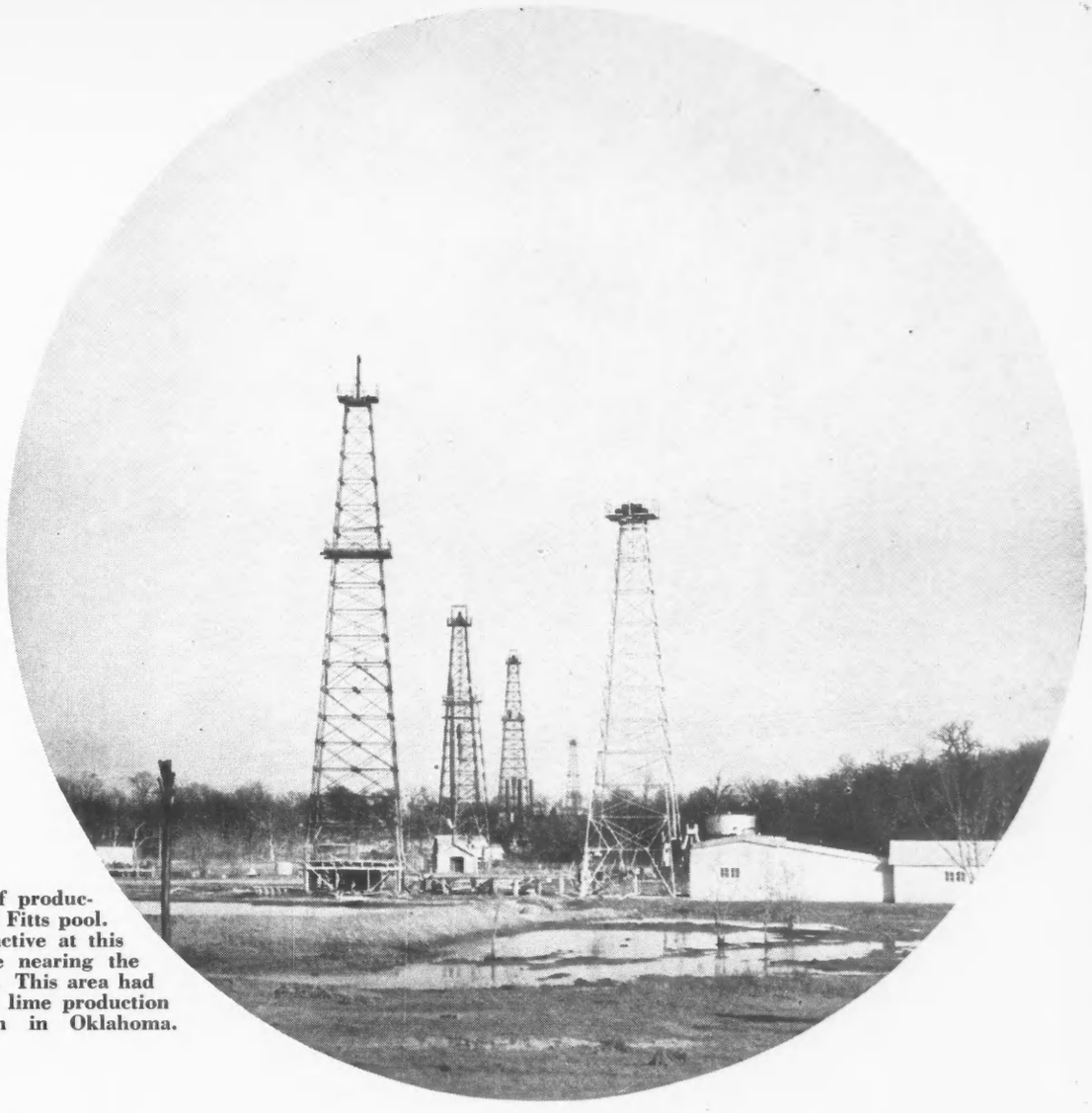
The association of the two conditions of water with probable oil reservoirs of South Oklahoma has received considerable attention, with both sides of the question claiming a number of authorative adherents. Past drilling has failed to totally support either theory, although each division has found circumstances to add weight to their claims. In a well just south of the major fault, the lower Simpson was drilled and was found to contain both salt and sulphur water in the same strata, and in the vicinity other wells have found both waters in different strata.

Other production has been proven for the area surrounding Fitts pool years previous to the first graben tests. Shallow tests had found both oil and gas in commercial quantities, and minor pools had been fairly well developed. Leases had been acquired by a number of interests on what was later to be Fitts pool, but in each instance the land was allowed to revert to the landowners without a test having been drilled. Such was the case when W. A. (Gus) Delaney, B. C. King and Sam Miller obtained a relinquished lease and put down the first test within the present limits of the field. This well, Hardin 1, NEc SW 30-2n-7e, was completed in January of 1933 for an estimated 30,000,000 cubic feet of gas from the Atoka sandstone. During the next year these three partners disposed of 540 acres in 25-2n-6e to a major concern for the modest consideration of $4,500,000.

E. H. Moore's Wirick 1, SE SE SW 29-2n-7e, completed during July, 1933, was the first test to show for oil when it proved for 75 barrels per day from lower Hunton lime at 3400 feet. W. A. Delaney, in his Craddock 2, NEc 25-2n-6e proved the Bromide productive in June of 1934. Ten months later, E. H. Moore's Mitchell 1, NW SW NW 31-2n-7e proved the upper McLish productive, and the same interest's Atkins 3, SW NW NW 32-2n-7e found the Wilcox sand productive. By this time, July 1935, drilling was quite active, and all acreage conceivably within the limits of the field had been leased. With the honors of discovery of new productive horizons divided between E. H. Moore, Inc., and W. A. Delaney, Magnolia Petroleum Company entered the list on October 20, 1936, when Statler 3, SEc SW 28-2n-7e found about 350 barrels daily production in the Oil Creek formation. This sand is the lowest strata in which production is now found, and is accepted by a majority of operators as being the lower limit, geologically. Beneath the Oil Creek is the Arbuckle. The belief exists that this major lime is not less than 8000 feet in thickness and that it is immediately above the granite. The Arbuckle lime has been penetrated in a few locations but has not shown indications either of the presence of petroleum or of being structurally capable of being a satisfactory reservoir.

As the discoveries in Fitts pool continued to indicate a larger and larger field, the adjacent town of Ada found itself paralleling the field in increased activity. Most of the equipment destined for Fitts passes through Ada, having a present population of 17,000, although some is routed by way of Ahloso or Stonewall. The necessity for increased transportation facilities became a matter of importance and resulted in $30,000 being spent to improve highways in the west edge of the field. Additional improvements were made in the connecting road between Ada and Fittstown, an oil field town of approximately 1000. From this start the roads of the field followed the spread of activity, gradually being extended to the present eastern limits of production. The cooperation existing between the many operators within the field is very apparent in the condition of the roads. E. H. Moore, Inc., has definitely established the policy of maintaining main arteries to its widespread production. A number of bridges have been constructed, and grading of shoulders is regular work. A majority of the main highways through the field have been topped with oil by E. H. Moore, Inc., this allowing travel from main locations during all but the most extreme road conditions.

There are at present between 2800 and 3000 men employed in Fitts pool, this figure including pipe line, construction and routine operations, as well as affiliated industries as casing crews, lumber men and employes subject to call. As the field is entering the routine development stage, the number of employes will gradually decrease, until it will consist



Looking down the edge of production along the east side of Fitts pool. This sector is the most active at this time, and appears to be nearing the pools limit of production. This area had developed higher Hunton lime production than any other location in Oklahoma.

of operators and repairmen. Five small towns are scattered throughout the field.

Pipe Line Outlets

The first pipe line into Fitts pool was The Texas Pipe Line Company's 2-inch from Stonewall loading rack to E. H. Moore's Wirick 1. Oklahoma Pipe Line Company ran a 4-inch line into the shallow production at North Fitts (Manahan), and both of these units were taken over by Stanolind Pipe Line Company, the latter 4-inch line being extended into Fitts. Late in 1934 construction was underway by Stanolind Pipe Line Company on an 8-inch line, this being the first major outlet for the field.

At the present time, Stanolind Pipe Line Company has two 8-inch lines to Pauls Valley, an 8-inch to Maud and a 4-inch line to Allan. These 4 lines are serviced by a 58,000 barrel station in the field. Four 300 horsepower, direct-connected, centrifugal pumps are used, being driven by gas power ends. Four small pick-up stations in the field help in collecting and dispatching the crude to the main station. This outlet system is running at about 92 to 93 percent of capacity.

Cosden Pipe Line Company has a 4-inch outlet from Fitts pool that was completed during 1936. The line is rated at a capacity of approximately 3800 barrels daily. One station housing an 85-horsepower unit serves as a booster.

Oklahoma Pipe Line Company has an 8-inch outlet from Fitts pool to Francis with a daily capacity of about 18,000 barrels. Two units are installed in the field as boosters, these being of the modern high-speed type. With a variable speed of from 600 to 800 rpm, the 8 cylinder units develop 128 bhp at 720 rpm.

Magnolia Pipe Line Company has an 8-inch line out of Fitts field with a daily capacity of 10,000 barrels. Two 100-horsepower units are used as boosters. This concern is increasing the capacity of this system by about a third by construction that is now underway.

Sinclair Prairie Pipe Line Company started transporting crude the second week in February through 19 miles of 6-inch line from Fitts pool. Construction work has only recently been completed on this outlet. The calculated maximum daily capacity of this field extension to the main system is between 8000 and 10,000 barrels. Two 125-horsepower units are being used as boosters.

The rapidity of development of Fitts pool taxed the pipe line facilities of every outlet, making repeated enlargements necessary. Present outlets are only very slightly in excess of daily requirements, and continued increase in productive capacity with further field development, will mean the increase of

carrying facilities a necessity. It is estimated that present crude outlets must be expanded to handle 35 percent more oil daily than is now being handled. Present lines are operating at an average of 98 percent of their combined efficiency.

Development of Special Practices

A number of variations from customary field procedures have been favorably received by Fitts operators. A number of these have been borrowed from other sections of the oil country, while many have been fostered on location through conditions not generally encountered in the Mid-Continent. It was early apparent that the more shallow gas pays of the field had a rock pressure considerably above the normal, or the expected pressure. This caused dangerous blow-outs and lost holes. Shaffer and Delaney's Harden 1, NE NW SW 30-2n-7e, was lost in the Gilcrease and had to be plugged. A twin location blew out in the Cromwell at 2250 feet.

The first well into the McAlester gas strata found the pay at 1168 feet and developed 30,000,000 cubic feet of sweet gas at a rock pressure of 553 pounds per square inch gauge. This pressure is about 45 pounds in excess of that which would normally be expected. Pressures above 1500 pounds per square inch were found to exist in the Simpson series, and these were again abnormal.

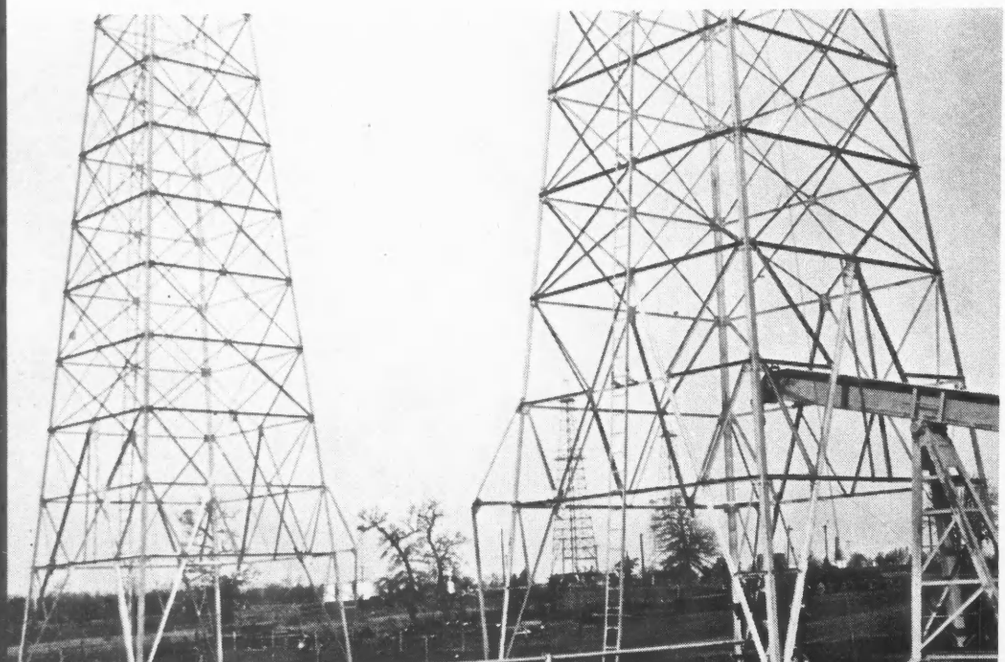
The combining of the high rock pressures and the porosity of the productive members of the pay horizons that resulted in high gas velocities made large gas wells. The dangers of drilling these formations corresponded with the unusual conditions encountered, and made it necessary to exercise special care.

Drilling muds used in penetrating the shallow sands vary from 12 pounds to a fraction higher. For deeper drilling, lighter muds are most generally used, ranging from 10 to 10.4 pounds. Even with these relatively heavy rotary muds for shallow work, and with the knowledge of high pressures, wells still encounter trouble. Blowouts have been decreased in number by precautions taken, and preparedness has been responsible for the very few accidents to men.

Pressure-control drilling and completion methods gained the support of E. H. Moore, Inc., engineers early in the development of Fitts field and this method has since been adopted by two other firms operating in the pool. Oil is used as the circulating medium when the hole is in a pay producing a sufficient quantity for the method. Gas under high pressure is introduced into the drilling fluid, and is metered through an orifice meter. Returning to the casing head the drilling fluid passes through an oil and gas separator. The gas is again measured and is vented. A comparison of the two volumes measured determines the volume of gas being produced under the specific conditions.

For the purpose of supplying high-pressure gas to field operations, E. H. Moore, Inc., has installed triple-stage compressors in the gas compressor station near the main camp. Gas from this source is piped to different operations at about 1000 pounds pressure.

Blowout preventers and packing units for the Kelley, and other equipment dependent upon pressure drilling needs, were tried in the field with good results at the start. Continued practice during operation established the fact that drilling time was considerably diminshed through pay horizons, that it was possible to obtain about a 40 percent increase in footage per bit, and that a far more accurate knowledge of productive possibilities and their relationship to stratification was possible through the use of pres-



Twin wells to Hunton and Upper Simpson horizons on Blackstock Oil Company's Harden lease, SW SE NW 30-2n-7e, Fitts pool. Many operators have installed pumping equipment at locations that are now flowing in preparation for the pool's pumping span of life. At many locations within the boundaries of major production, three and four wells may be necessary as "twins" to produce from the various pay horizons.

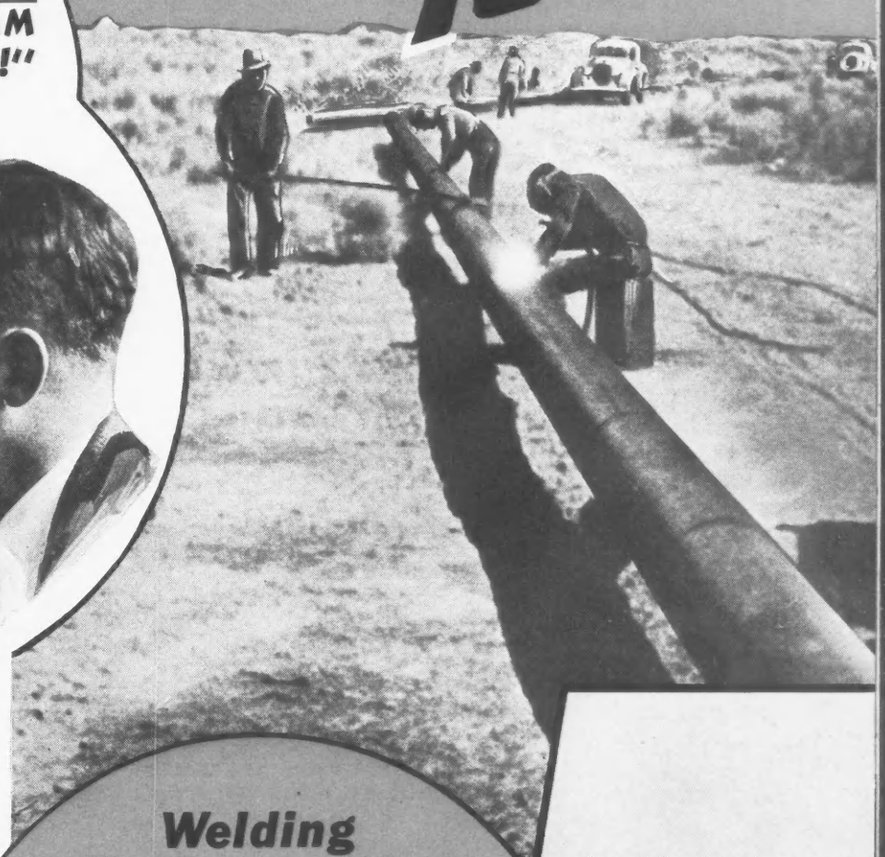
WORLD'S RECORD

Every joint "Shield-Arc" Welded and OK by test

304 MILES— 10-INCH LINE 70 DAYS

"LAD, THIS IS A PIPE DREAM COME TO LIFE!"

"RIGHT, POP. AND 'SHIELD-ARC' WELDED, IT WILL BE AN ECONOMY DREAM -FOR LIFE!"



"AND this prophecy is no weather forecast.—*'Shield-Arc'* welds have been shown by thousands of engineers' tests to be even *stronger* and *more lasting* than mild steel itself. You hang up a service economy record the minute you specify the *'Shield-Arc'* process.

"But getting back to this world's speed record. Across flat and hilly terrain, through towns and farms—this 10-inch line did step out when it covered the 304 miles between Bakersfield and Martinez in 70 days.

"And to top that off—the line was tested under air pressure with soap suds, carefully and skillfully. The engineers pronounced it 100% OK.

"It just shows that QUALITY and SPEED can *both* be tops when dependable 'Fleetweld' and *'Shield-Arc'* welders are used. And here they were used exclusively.

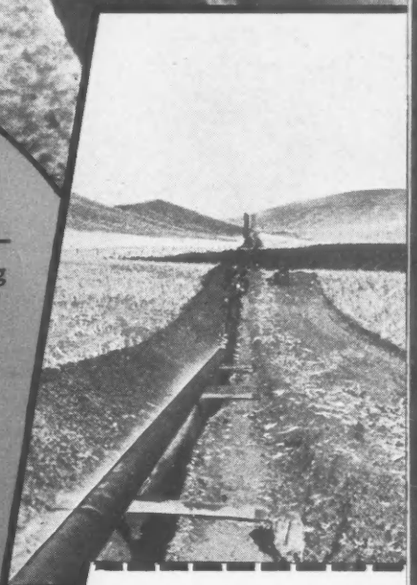
"If you want record-breaking results on *any* metal fabricating job—in the field or in the refinery—use this Lincoln team. It's the welder of CHAMPIONS!"

Welding Facts

—Diameter of pipe 6"—8"—10"—12"—mostly 10". Type of joint—bevelled 30 degree butt, no chill ring. Firing line joints roll-welded—240' to 280' sections of 40' pipe—3 beads for each weld (5/16" 1/4"—5/16" "Fleetweld" used). Speed—approx. 5 welds per hour. One of the crews of 11 welders averaged 2¼ miles per day.

Welding Contractors—H. C. Price, Inc., Bartlesville, Okla. General Contractors—Lindgren and Swinerton, Inc., Los Angeles, California.

Along the right-of-way of the Shell Oil Company's 10-inch oil line from Bakersfield to Martinez, Calif.



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sure-controlled drilling as against cable or mud drilling.

Other advantages have been pointed out by operators, namely the elimination of the certainty of mud intrusion, the obtaining of more representative samples and greater safety. These advantages have been considered worthwhile in Fitts in spite of additional expense of equipment, more time spent in rigging up, and the dangers of caving through lack of wall-sustaining fluid.

Presure-controlled drilling has not been used for all formations of the field, but only for those below the Viola lime or near the top of the Ordovician. These formations include the Bromides, McLish, Wilcox and Oil Creek sands; or a total structural depth averaging about 1190 feet below 3700 feet.

The Hunton, Viola and Bromide formations have been treated with acid, although results in the case of the latter horizon have been highly varied and not subject to wide adaption. On the other hand, the treatment of the Hunton and Bromide formations, which are more nearly true limes in nature, has been exceptionally successful. Both of these formations, and particularly the Hunton, are more porous than at other South Oklahoma locations, and a variation in the customary manner of treatment has become an accepted practice.

The general manner of treating the Hunton, a manner which has been accepted by a majority of Fitts operators, is to treat first with a comparatively small charge, then with a heavy one. Approximately 2000 to 5000 gallons are used in the first treatment, and from two to three times this quantity for the second treatment. This makes the total volumes used for each Hunton well between 5000 and 18,000 gallons. In a particular instance, 25,000 gallons were used on one well with excellent response. Although there are exceptions, most of the pool's Hunton lime wells have been treated by this dual, or delayed treatment, method. The characteristics of the formation are such that it will respond quickly to treatment, and its porosity allows the use of larger charges than are generally safe.

The Viola formation has been treated in a manner corresponding to that used on the Hunton stratum, without the high gallonage. Only between 2000 and 5000 gallons are customarily used, and these may be in either single or spaced treatments.

A few wells completed more than a year ago have been retreated as an experiment to determine the effect. In all but one case, production has been materially increased in a proportion closely corresponding to the increase following initial treatment. Daily production in these wells had declined according to production and reservoir energy, and their greater productive capacity re-established through the second use of treatment was largely through a cleansing action.

Considering the pool as a unit, casing practices are uniform and simple. The customary string includes about 525 feet of surface pipe, usually of 13⅜-inch. Wells to the Wilcox have about 4300 feet of 7-inch set on the sand, with a second string of about 3900 feet of 9-inch. Many of the Simpson wells are similarly cased although a large proportion have only one string to the Simpson pay. The Hunton lime wells are cased with about 525 feet of 13⅜ surface pipe and have about 3300 to 3500 feet of 7-inch set on pay. There are a number of gas wells in the field, producing lease gas from the Cromwell or McAlester sands, and most of these are being produced directly through the casing as is common practice.

The cementing of casing strings varies in different parts of the field, and in different strata. Most of the operating companies use from 400 to 550 sacks of cement to set surface pipe, 1000 to 1250 sacks for the Hunton well casing, and not less than 1500 and sometimes more than 2000 sacks for Simpson and Wilcox wells. Although there is no set standard, the tendency in Fitts is toward the use of large cement ratios rather than small.

In the actual setting and introduction of cement into some of the wells, certain difficulties have been experienced. Most of the trouble has been due to the gas pressures and volumes encountered, and in a few instances cement has been pitted by seeping gas from shallow pay. Most of the difficulties experienced have been encountered with the surface string, the longer casing strings being cemented in the regular manner without particular trouble.

A few firms have made it a practice to mix cement with a proportion of fibrous material, or casing lubricant, and results entirely satisfactory have been claimed. The mixed cement, being lighter than the original mix in proportion to the content of added or mixed material, is circulated higher around the casing at the same bottom hole pressure, and having the additional fibrillous content is less apt to loose a part of its volume in excessive pore space or minor caverns. The surface string, if the hole is not too jagged, will be completely cemented to the surface with 550 sacks.

In some instances it has been found practical to set surface casing on a shoulder in a reamed hole. A 1-inch or 1½-inch string is then run down outside the casing, and the cement is introduced through this pipe. This manner of cementing allows the gas being produced by the well to vent iself through the casing, and eliminates the possibility of agitation of the cement column while setting.

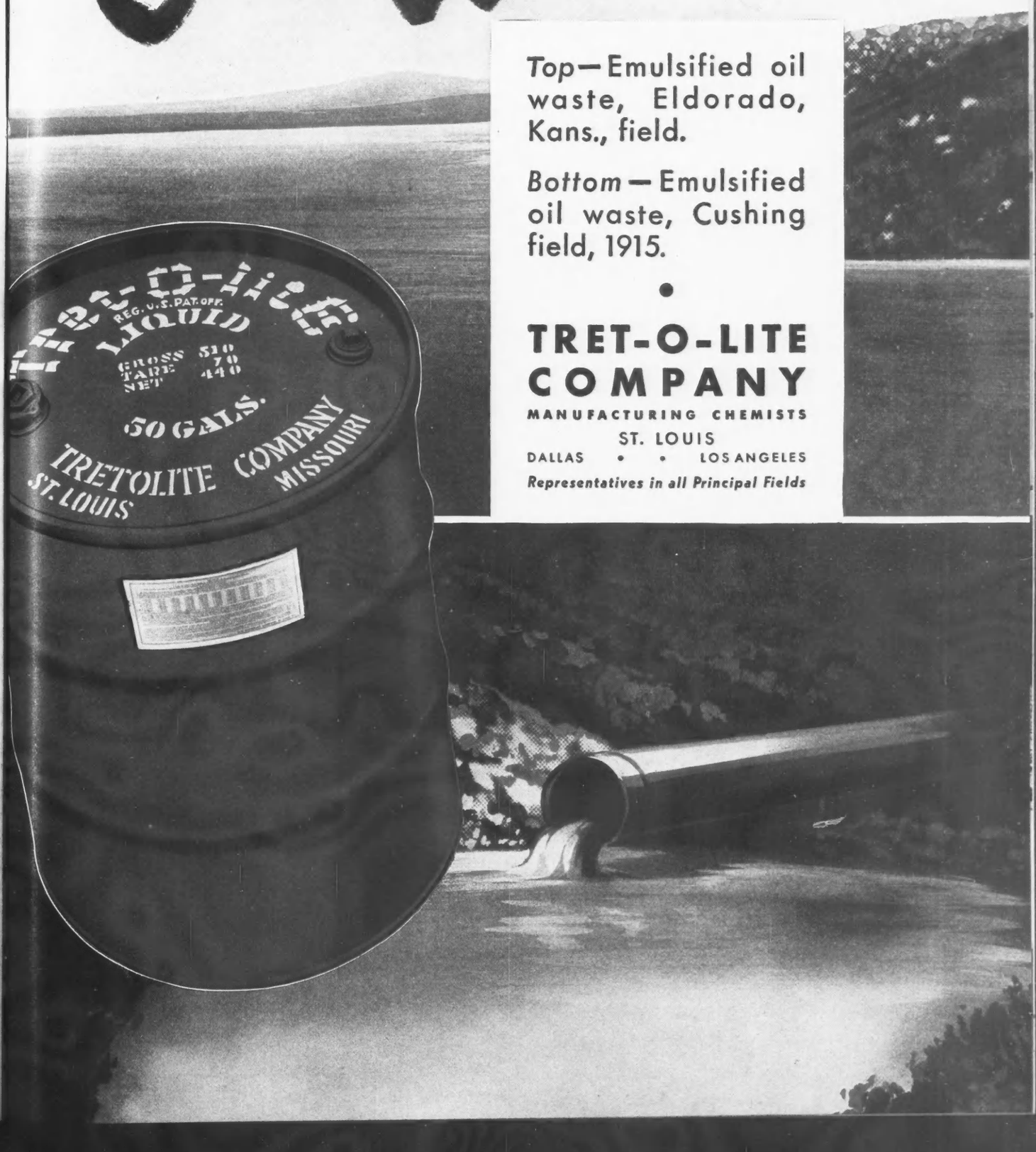
Plants and Camps

In addition to the pumping stations handling crude produced in Fitts pool, three large natural gasoline plants are either operating or being completed at this time. Carter Oil Company recently added 2 more 230-horsepower compressors to its main plant near the center of the field, making the total number of units 21, of 4830 horsepower. J. E. Crosbie, Inc., has a natural gasoline plant housing 17 compressors of 240 horsepower each. Magnolia Oil Company is finishing construction of a gasoline plant at the east end of the field. This plant houses 15 units of 170 horsepower each operating 18½-inch pistons through a 20-inch stroke.

The gas volumes being put through the plants has continuously increased, and it is expected that the peak is considerably above present volumes. This should not be taken to indicate that there is waste during production or that the oil/gas ratios are unproportional; but that the field is normally producing about 90,000,000 cubic feet of gas per day under normal operating conditions.

Carter Oil Company's plant, the largest in point of volumes being handled, can pass about 63,000,000 cubic feet. J. E. Crosbie, Inc., is handling approximately 35,000,000 cubic feet daily. The gas being produced in the field is not averaging above one

Emulsified Oil Waste



Top—Emulsified oil waste, Eldorado, Kans., field.

Bottom—Emulsified oil waste, Cushing field, 1915.

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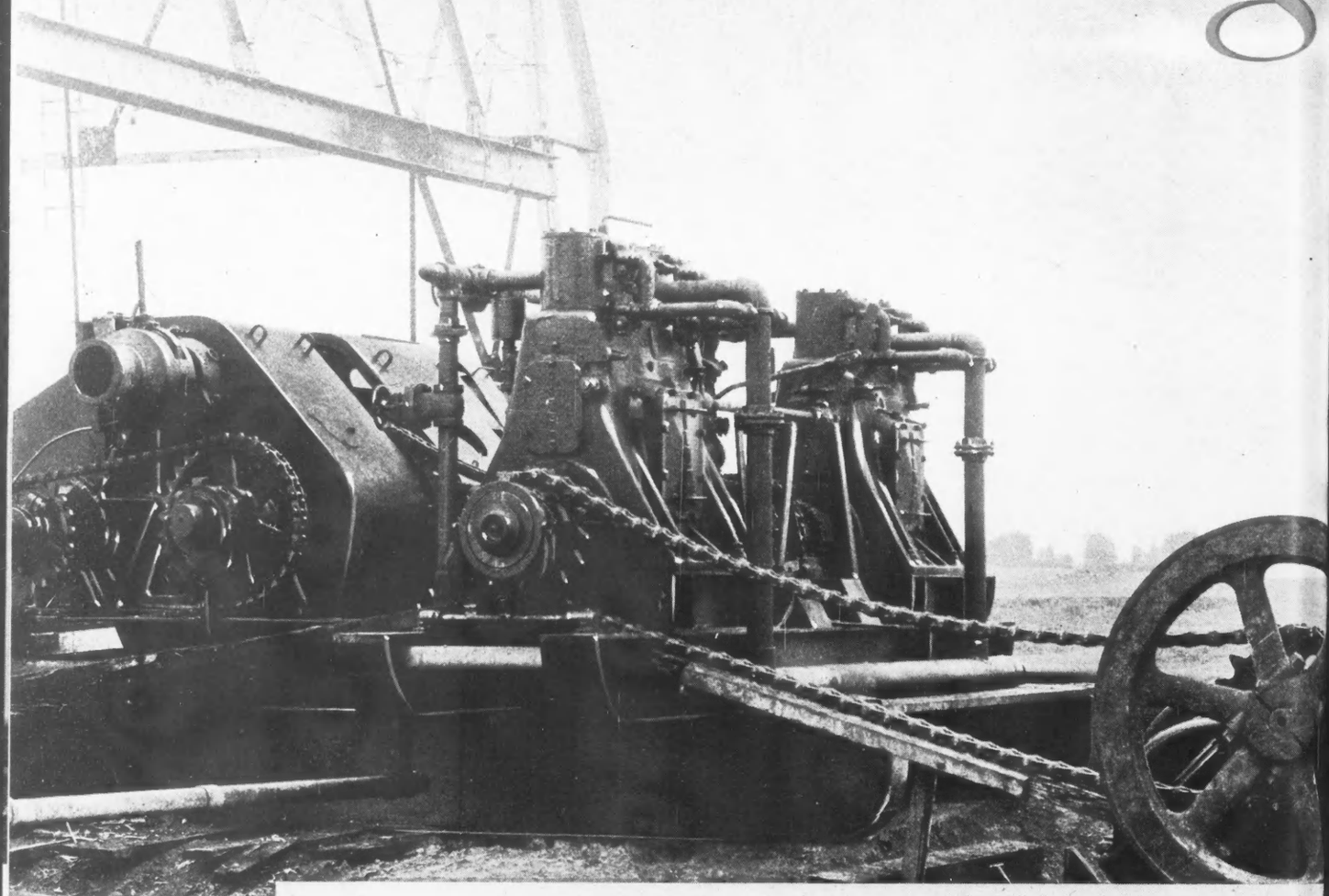
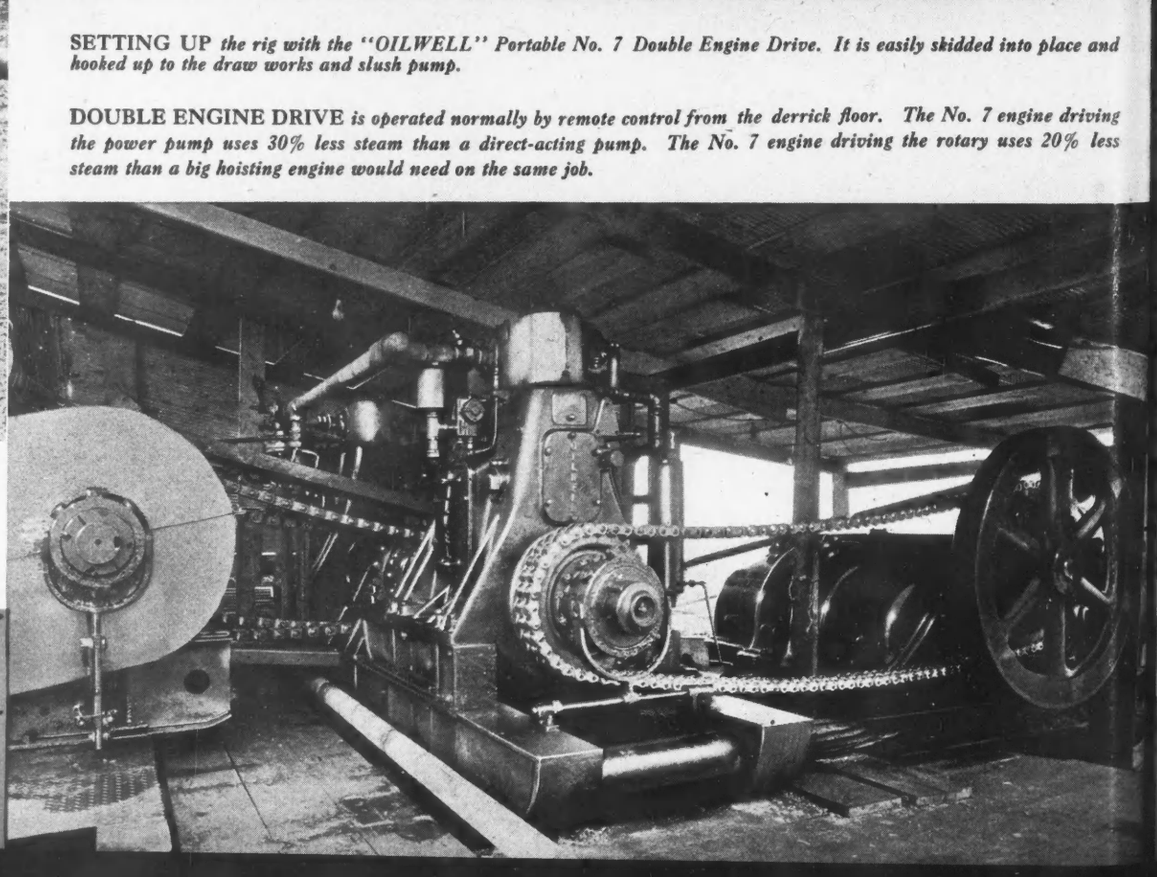


SETTING UP *the rig with the "OILWELL" Portable No. 7 Double Engine Drive. It is easily skidded into place and hooked up to the draw works and slush pump.*

DOUBLE ENGINE DRIVE *is operated normally by remote control from the derrick floor. The No. 7 engine driving the power pump uses 30% less steam than a direct-acting pump. The No. 7 engine driving the rotary uses 20% less steam than a big hoisting engine would need on the same job.*



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perating engines singly
in tandem is Powerful,
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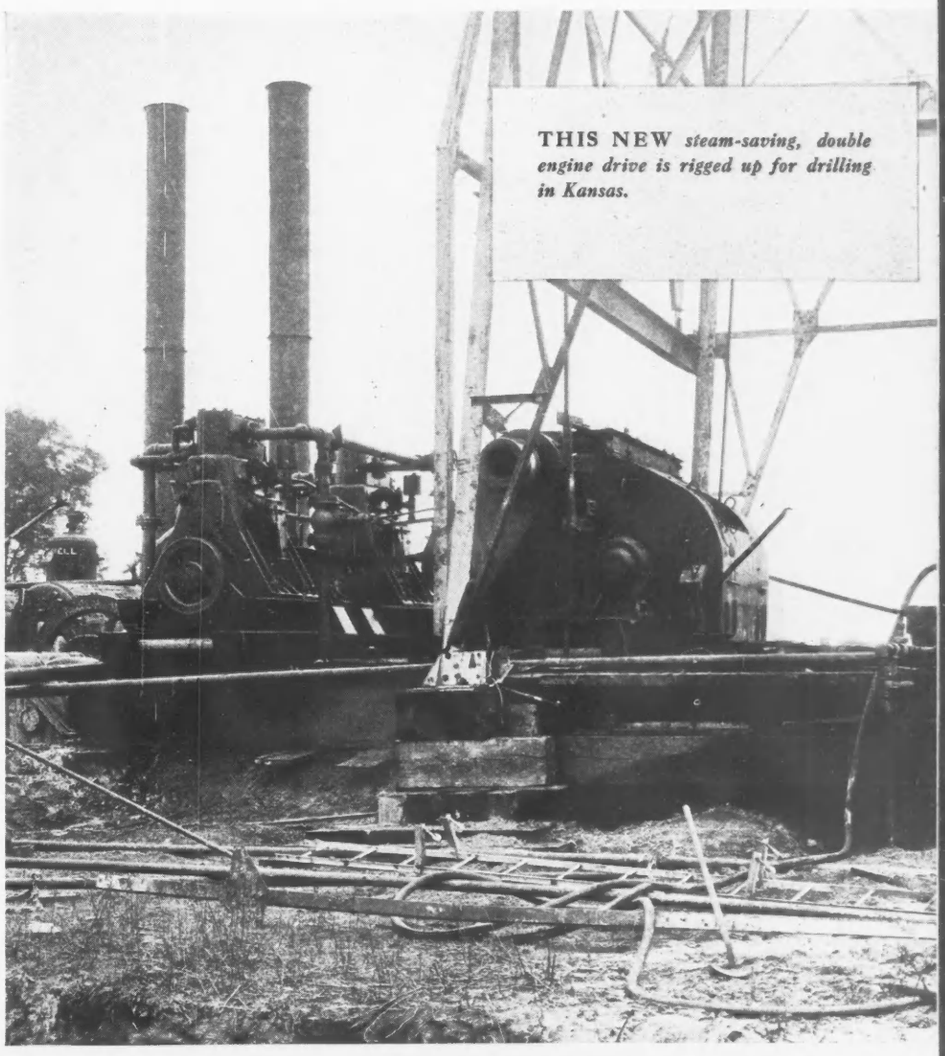

THIS NEW *steam-saving, double engine drive is rigged up for drilling in Kansas.*

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INVESTIGATE! These econ- mical drilling units have won im- ediate acceptance. Write for ulletin No. 164.

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OILWELL"

Andrew Harden and a visitor in conversation before the Harden log cabin. In the left foreground stands the walnut and bench upon which details of the lease that led to the discovery of Fitts pool were agreed upon. The ten acres surrounding the cabin have not been leased, although the tract is near the center of production.

"A time there was . . .
When every rood of ground maintain'd its man;
For him light Labor spread her wholesome store,
Just gave what life required, but gave no more:
His best companions, Innocence and Health;
And his best riches, ignorance of wealth."

gallon of gasoline per thousand cubic feet; the actual content being closer to 3/4 gallon. As the field pressures decrease the gravity of the gas will increase, and likewise the gasoline content. Edge production is accompanied by the highest gravity gas, with the lean gas coming from near the structural cap.

Magnolia Petroleum Company's plant will be capable of passing between 48,000,000 and 55,000,000 per day. Most of the gas for this plant will come from the eastern edge of production, where the gas is slightly higher in gasoline content than is that produced west of the center of the field.

E. H. Moore, Inc., has a compressor station adjoining the firm's main camp on the Wirick block. Six 230-horsepower, direct-connected compressors are installed, each of high discharge capacity. By triple staging the gas passing these units, three of them can discharge at 1000 pounds per square inch. This gas is then transported to the field and used in pressure-controlled drilling operations. Gas at lower pressures is used for general lease and camp operation.

In conjunction with this station, E. H. Moore, Inc., has recently constructed a generating plant housing 3 400-horsepower Deisel power ends, converted to natural gas as fuel, direct-connected to 4160-volt, 3-phase 60-cycle, generators. This electric plant is an addition to the west end of the compressor building. There is space provided for the setting of another generator if the concern deems it advisable at a later date.

The greater portion of the electric power generated at this plant is being distributed to E. H. Moore leases where electrical pumping equipment has been installed. It is planned to convert all but a few of the outlying wells to electric power as they reach the stage where lifting is required. Up to this time there have been 17 electrical units installed, with a few additional installations to be made. Individual substations at the leases have been constructed. Power lines are under completion.

Camps for Field Workers

Fitts pool could well be noted for modern camps for employees of the various operating companies. In this respect, E. H. Moore, Inc., has a main camp on the road through the pool from west to east that is pointed out as being unusual in layout and accommodations. The tract on which the camp stands is entirely landscaped; being graded and seeded with grass, having had trees planted, and fences constructed. The camp includes school buildings (bunk houses, boarding houses and office buildings in addition to the residences.

Employees have all conveniences generally obtainable in towns or cities. The dwellings offer electric service from the Company's own power system. Telephone service is afforded. Each house is piped for gas and water, the latter coming from Byrd Mill spring within the boundary of the pool. Complete sewage accommodations have been installed. Construction of each house was carefully supervised,

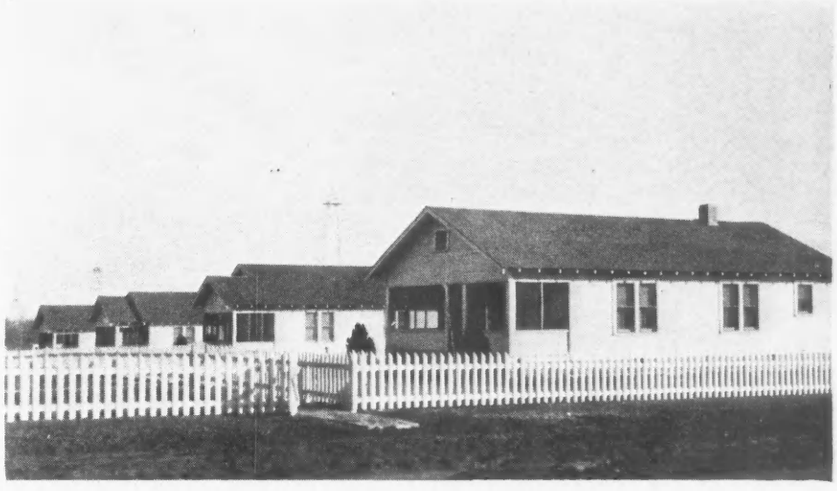
the result being an evidence of structural neatness. Each residence is equipped with a gas refrigerator.

Another notable camp is at the town of Stonewall, just north of the pool. Here Magnolia Petroleum Company has constructed and landscaped a tract at the edge of town for employes working in the pool. This camp, and also Carter Oil Company's camp on the Ada road near the west end of the pool, are of the most modern type and a definite credit to the companies authorizing their construction.

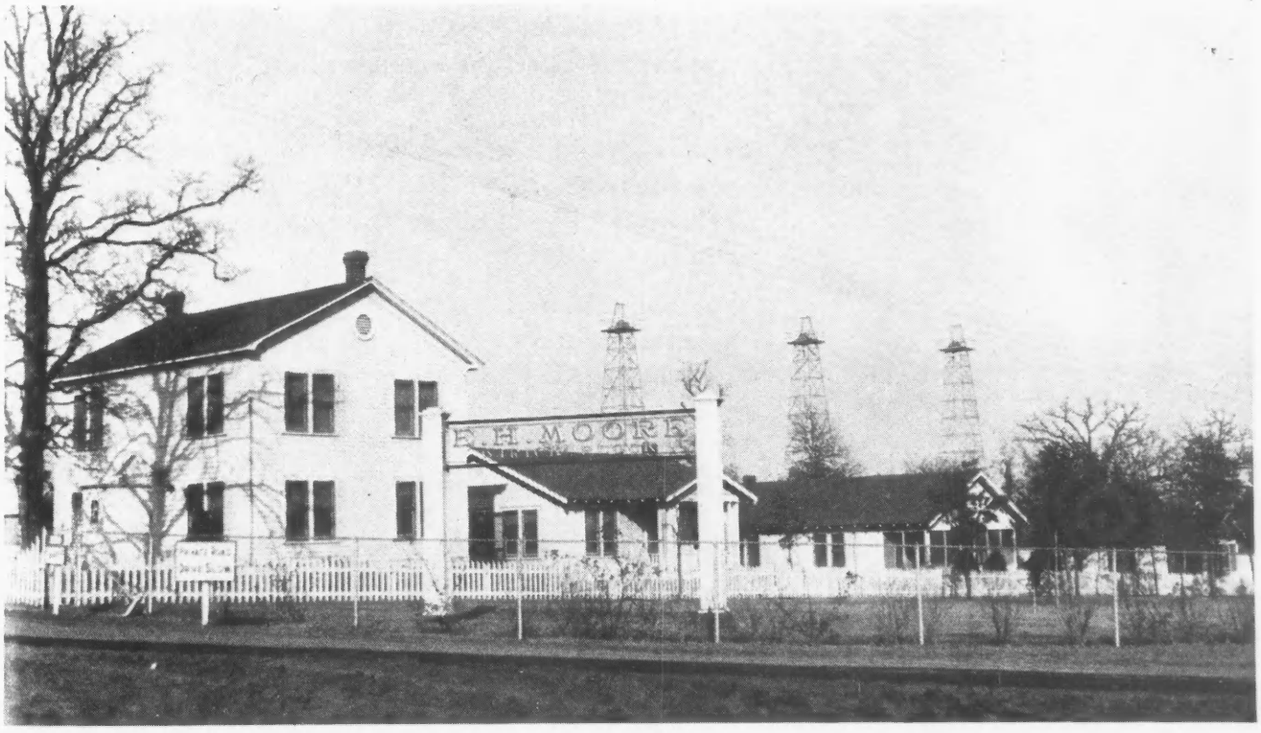
Old Settler

The oldest dwelling in the field is that of Andrew Harden, pioneer who had homestead rights on the heart of the pool. Harden's house constructed of native timber before the first well was drilled in Pontotoc County, remains as an outstanding landmark between towering derricks, and amid the almost constant grumble of activity. The cabin stands on a 10-acre tract that has not been leased for drilling, yet is near the center of greatest production. More than $100,000 has been offered for this small piece of ground, but Harden is satisfied with daily returns from other parts of the homestead, and is withholding the land on which his cabin rests, retaining its memory as a respected assurance against the encroachment of modern industry.

Some 40 years ago, Harden planted a walnut tree in the cabin yard. Years passed and the tree became of majestic spread. A rude bench was cut and built in the tree's shade, and it was on this bench that the details of the lease that led to the discovery of Fitts pool were agreed upon. Twice the tree has been struck by lightning, a fact that is widely discussed locally. The belief is claimed to exist that if one can find a 40-year old walnut, twice struck by lightning, and having a rude bench beneath, then such a tree covers an oil pool.



A section of E. H. Moore, Inc. camp on the Wirick block, Fitts pool. The two story structure to the left is the office, headquarters of operations for the field. Employes' residences are to the rear of the office. This camp is one of those expressing the recent trend toward modernization.



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BALL AND ROLLER BEARINGS

California's Market Continues Shifting

CURRENTLY SHIPMENTS ARE CONFINED TO WEST COAST AND PACIFIC FOREIGN PORTS

By BRAD MILLS, Associate Editor

DISTRIBUTION of California petroleum products continues to shift, with the steady increase in local consumption and fluctuating demands in foreign markets featuring the disposal of a balanced daily production. Certain trends during 1936 were particularly noticeable, having been a continuation of earlier shifts that closely parallel local and world conditions.

Since losing a portion of its world market several years ago, California has been forced to satisfy itself with a much stronger "live at home" policy than it previously advocated. Its natural domestic trade territory includes six Western states and parts of two Rocky Mountain states, but slices of other states might logically fall into this column. A number of districts reached by water have long felt the influence of California products, but only unusual conditions led to such a long-range distribution in competition with more logical sources of supply.

Through sheer necessity California has been forced during a part of the past 13 years to find new and greatly increased outlets for its petroleum products. Two great overproduction periods forced California oil to compete with oil that ordinarily would have been supplied without question from other producing districts. The distribution of the excess oil had to be accomplished, since there was no proration and voluntary control of production between 1923 and 1930, was almost out of the question. The state has been severely censured for its shipment of petroleum products to almost every consuming country in the world, but because of limited storage facilities and inability to control new production the outgoing flood was partially justified. The fault lay more with the producer than with the marketer who actually controlled the destination of the oil.

The drying up of many world markets and the encroachment of foreign oil on other markets have reduced the shipment of California products to several consuming districts that at one time were partly or largely supplied by California. The reasons for these losses are many. The recent development of oil close to large markets, political changes, and the natural decline in California's potential have contributed heavily to the loss in shipments to remote

Tanker Shipments From Pacific Coast Territory, December, 1936

(In barrels of 42 gallons as reported by Bureau of Mines)

	DESTINATION						
	Intercoastal		Foreign		Alaska and Hawaii	Canal Zone	Totals
	Atlantic	Gulf	Atlantic	Pacific			
From Los Angeles Custom District—							
Crude	.....	....	.....	684,823	.....	.....	684,823
Fuel Oil	.....	....	.....	1,282,009	60,633	.....	1,342,642
Gas and Diesel oil	174,664	....	.....	148,462	5,110	101,348	429,584
Natural Gasoline	.....	....	.....	15,507	.....	.....	15,507
Gasoline	33,558	....	246,387	215,546	70,288	32,589	598,368
Kerosene	.....	....	.....	107,055	3,947	8,439	119,441
Total	208,222	....	246,387	2,453,402	139,978	142,376	3,190,365
From San Francisco Custom District—							
Crude	.....	....	.....	363,738	.....	.....	363,738
Fuel Oil	.....	....	.....	24,961	.....	.....	24,961
Gas and Diesel oil	.....	....	81,848	155,325	.....	.....	237,173
Natural Gasoline	.....	....	.....	5,044	.....	.....	5,044
Gasoline	.....	....	.....	45,474	66,091	.....	111,565
Kerosene	.....	....	.....	81,431	7,181	.....	88,612
Lubricants	.....	....	.....	17,871	934	.....	18,805
Total	.....	....	81,848	693,844	74,206	.....	849,898
Totals from All Custom Districts—							
Crude	.....	....	.....	1,048,561	.....	.....	1,048,561
Fuel Oil	.....	....	.....	1,306,970	60,633	.....	1,367,603
Gas and Diesel oil	174,664	....	81,848	310,401	5,110	101,348	673,371
Natural Gasoline	.....	....	.....	20,551	.....	.....	20,551
Gasoline	33,558	....	246,387	261,020	136,379	32,589	709,933
Kerosene	.....	....	.....	188,486	11,128	8,439	208,053
Lubricants	.....	....	.....	17,871	934	.....	18,805
Total	208,222	....	328,235	[1]3,153,860	214,184	142,376	[1]4,046,877

[1] Includes 6,614 barrels gas and Diesel oil from Arizona, Oregon and Washington Custom Districts.

districts. World conditions since 1930 also have forced a shift in the source of supply for many large countries.

Holds Natural Markets

The loss in markets for California is not so serious as it might seem. A few new markets have been established, and the state still has most of its natural domestic and foreign outlets. In the final analysis of the present situation, it may be said that the state is fully supplying the bulk of its natural and logical trade territory, plus a number of districts that could be classed on the border line. Other marginal districts might be added, but a broader market would necessitate a larger production of crude oil.

When California petroleum products began to appear in increasing quantities along the Atlantic Seaboard almost 15 years ago, there was an immediate realization that the economic structure of the industry was undergoing a distinct change. The reception accorded the rapid increase in shipments through the Panama Canal was viewed with a mixture of alarm, resentment and surprise.

California has been a little domain of its own for 50 years, depending on the Pacific Coast states and Pacific foreign countries to absorb its products, with a few odds and ends going to world ports.

Periods of overproduction during the early days were weathered only with great losses to producers, due to the limited outlet. Crude oil prices dropped at times to 10 cents per barrel, and there was little demand for oil even at such a low price. A spirit of restlessness prevailed among the aggressive producers and marketers, but they could think of no way to dispose of their surplus products. They were hemmed in, with rail shipments to the East and water shipments around South America out of the question.

Then came the Panama Canal and a much closer route to the Atlantic Seaboard and Atlantic foreign ports. A steady production period, heavy demands from markets that always had absorbed its products, and activity caused by the World War kept California's attention turned away from the Atlantic Seaboard for several years, much to the benefit and satisfaction of other producing districts.

Time has tempered the ire of marketers in other districts, and California distributors now are not held with the contempt that was shown for them during the height of high distribution periods between 1923 and 1930. When other producing districts more recently blossomed out with an overproduction, they followed the same tactics California was forced to follow in the past. In at least one case, the new offender had most severely criticized the California distributors during previous years. The shifting overproduction simply proved that any district having a heavy overproduction must find a way to dispose of its surplus or become guilty of waste.

East Texas and South America obtained control of many markets that at one time were controlled

by California. The influence of the East Texas field was felt both directly and indirectly in large markets that were regarded as marginal during the overproduction in California, and both fuel oil and gasoline shipments were affected.

When Mid-Continent oil started finding its way to the Gulf Coast in large quantities, producing districts in all parts of the world were affected. California suffered severe losses from this "encroachment," and has not yet recovered from the decline in shipments to several large consuming centers. The net loss probably has been no greater than that suffered by other producing districts, since the adjustment of distribution has affected all world markets.

California did not ship a barrel of gasoline to the Atlantic Seaboard during January, 1937, marking the first month in perhaps 12 years that this commodity was missing in petroleum products sent by the state through the Panama Canal for consumption along the eastern coast. One short cargo was listed as gasoline, but it was identified as cleaning solvent of about the same gravity as gasoline.

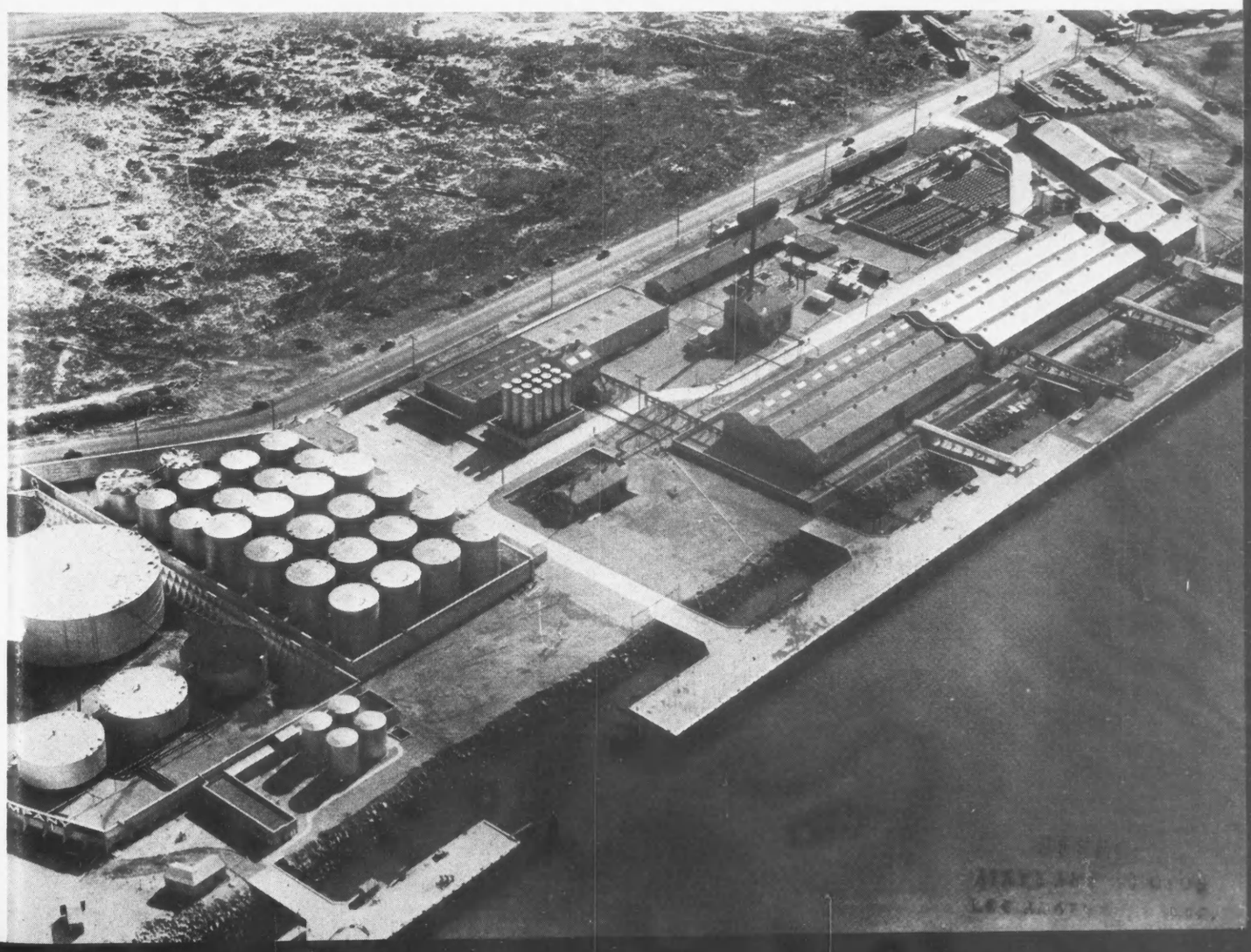
The Atlantic Seaboard has been a bone of contention since 1923, when California was forced to find new outlets for the greatest overproduction period it had experienced. The eastern fringe of the United States offered an opportunity for shipping all types of petroleum products by water from California. Fuel oil, gasoline and other commodities found their way to a district that formerly had been supplied by other parts of the United States, Mexico and South America. The easy movement by water helped to offset the distance, and such large consuming centers as New York, Boston, Philadelphia and Baltimore became distributing centers, directly or indirectly, for California petroleum products. Oil produced closer to these large cities could not compete with the flush production from the west, since during a part of California's overproduction period other districts yielded little more oil than they consumed. The Atlantic Seaboard long has been anybody's market, but during the past five years this great consuming district has been obtaining the bulk of its petroleum products from the logical producing centers.

Three Outlets

The three great outlets for California petroleum products now are local, Pacific foreign and Atlantic foreign. The local distribution includes the natural western states and Alaska, with the Hawaiian Islands. The Pacific foreign distribution constantly shifts, but it ordinarily includes Japan, parts of China, parts of Australia and New Zealand, and scattered countries that prefer California products. The Atlantic foreign includes a changing list of countries that obtain their petroleum products from many sources. France, Italy, Spain, England, African ports, Norway and Sweden and other countries are on the receiving end, several countries having shown a preference for California products. Several countries ordinarily supplied from other producing dis-

Ample Shipping Facilities

California ports are well equipped for handling both crude oil and refined products. Shown are air views (by Spence of Los Angeles) of Associated Oil Company, on the right, and The Texas Company's case and package plant.



tricts occasionally absorb cargo lots of California crude oil when political policies force abandonment of old contracts.

California has long since resigned itself to a changing position and has become reconciled to the loss of markets that were supplied during the period of overproduction. The growing distribution in its own trade territory in the United States has been a bright spot for several years. The greatest profit was not in the export angle, since it served chiefly to permit movement of surplus products. The markets lost outright were those in which competition was keenest.

The lower production cost in other world producing centers placed California at a disadvantage. A large part of the oil exported promiscously between 1923 and 1931 was produced from flush fields and the cost per barrel was low. Most of the current production comes from settled fields, a type of oil that cannot compete with the flush production in other districts nearer consuming points in question.

Heavy Local Consumption

The consumption of gasoline during 1936 in western states was almost 12 percent greater than in 1935. This gain alone was instrumental in giving California a good distribution of petroleum products. An occasional loss in export competition was more than offset by this increase in consumption of all petroleum products in the state's natural trade territory. The early trend in 1937 was sharply upward.

The shipment of California gasoline to the Atlantic Seaboard holds a very interesting history. This gasoline does not hold the preference it enjoyed before cracking operations improved the quality of Mid-Continent and Gulf Coast gasolines. The average Eastern motorist believed California straight-run gasoline to possess a much higher anti-knock value than Mid-Continent gasoline, and there were good reasons for such a belief. Other gasolines have been improved to compete with gasoline produced from California crude oil, and it now is possible to match almost any gasoline with another product made from various crude oils. The preference once held for California gasoline was comparable to the preference shown in some districts for Pennsylvania lubricating oil.

The movement of California fuel oil to the Atlantic Seaboard was very heavy during 1934 and parts of 1933 and 1935. This movement helped to reduce the record stocks of heavy products, but it removed the surplus with which the state might hope to compete in foreign markets. The rapid reduction of such stocks did more good than harm, however, although it left only a limited amount of desirable fuel oil for export.

Since 1922 the Atlantic Seaboard has been anybody's market. The Gulf Coast normally would have supplied the bulk of shipments, but it could not release enough oil to compete with California during the greater part of the time. The lack of pipe lines and the cost of moving Mid-Continent products to tidewater proved definite barriers. South America was a factor until 1932.

East Texas, Conroe and several large Gulf Coast fields eventually released a large quantity of oil for export, and with a shorter water haul from Houston the natural trade territory along the Atlantic Seaboard was partly reclaimed from California. Other California markets also were lost to the Gulf Coast.

Atlantic foreign shipments from California have averaged much lower during the past few years than formerly, but recently an upward trend has been recorded. The greater demand seems to have been prompted by a desire of several nations to store oil with the belief that a war is close at hand. Three or four countries now seemingly nearest war have bought increased quantities of California oil.

The Pacific foreign exports recently have been the backbone of California's total foreign shipments. During 1936 the average daily shipments of all products to this territory approached 100,000 barrels. Crude oil, fuel oil, gas and Diesel oil, gasoline and kerosene move heavily from California to Pacific foreign ports. Despite stiff competition in the northern part of the consuming territory, California petroleum products are preferred. Japan has a close working agreement with California producing companies, while parts of China show a strong preference for California products.

Australia was until a few years ago supplied in a large part by California oil. Most of this market has been lost to other producing districts. Russian and English interests have been supplying a large part of Australia's needs for several years. Russia pursued a vicious and aggressive competitive policy to gain control of many market outlets in Australia and the Orient. Such a strong bid for business made it impossible to export petroleum products from California to Australia at a profit.

Russia also has made a very strong bid for kerosene business in China and other Oriental countries. This country has been a strong factor, and has been pushing its shipments of crude oil, gasoline and fuel oil to many markets formerly dominated by California. In gaining trade territory, Russia has conducted long and drastic price wars, but some of the territory gained logically belonged to her—at least according to Russia. Both opposing forces were guilty of unethical marketing practices, if reports reaching the United States were correct.

The 35,000,000-barrel reduction in heavy oil stocks between 1933 and 1936 swept away a large part of the surplus stocks that supposedly stood in the way of normal California recovery. Regardless of the permanent effect of the reduction, the state has found a market for all current excesses of heavy oils since the termination of the heavy movement toward the Atlantic Seaboard. The present stocks of heavy oils are less than 75,000,000 barrels, which are about 7,000,000 barrels greater than at the beginning of 1936. During 1930 heavy oil stocks approximated 112,500,000 barrels.

Light crude stocks declined sharply during 1936 to 33,700,000 barrels at the beginning of 1937. Gasoline stocks were about 12,000,000 barrels at the beginning of 1937, giving the state an 87-day supply of this commodity.

A balanced production of crude oil, increased development elsewhere, tariff barriers, and political policies have given California three years of conservative export business. Semi-dumping played an important role during the height of two production periods, but a saner production policy has restored the state's export shipments to a fairly steady and greatly reduced level. The loss of a part of the Chilean and western South American market to oil fields of northern South America did not appreciably reduce the total export volume, but this modest market was one of the most desirable open to California.

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"OIL is the indispensable commodity around which revolve the policies of nations . . . Output of crude in this country is declining in comparison with the rest of the world . . . Coming years will likely experience increasing imports . . . In 1936 American foreign oil holdings were extended in many parts of the world . . . British nationals are engaged in exploitation of petroleum resources in every major oil producing country, except Russia, Bahrein Island, and Colombia" . . . are a few of the points brought out in Hopper's discussion of the industry.

THE AUTHOR
called back to Washington from Calcutta, India, to serve the American oil industry.

INADEQUATE SUPPLIES IN TIME OF WAR INSPIRING

International Search

FOR PETROLEUM AND SUBSTITUTE FUELS

By PAUL L. HOPPER, Petroleum-Coal Section,
Bureau of Foreign and Domestic Commerce

WORLD production of crude petroleum approximated 1,810,230,000 barrels in 1936, representing an all-time record and the third successive annual increase since 1932. Substantial gains were registered by the United States, Russia, Rumania, Venezuela, Colombia, Trinidad, Iraq, and Bahrien Island. Preliminary reports indicate little change from 1935 for the 20 remaining countries producing petroleum. On the surface it would seem that there is enough oil for all countries, notwithstanding rising consumption, and normally there would be little apprehension. It is the possibility of inadequate supplies in time of war that inspires programs for the provision of petroleum and substitute fuels at any cost.

National Policies Revolve Around Oil

Today oil represents much more than gasoline for motor cars, fuel for ships and lubricants for minimizing friction between moving parts of machinery; it is the indispensable commodity around which revolve the policies of nations.

In any sketch showing the production and movement of petroleum throughout the world, the United States occupies the center of the picture. Close to two-thirds of the world's output of crude is produced and refined in this country, and but for the unusual situation resulting from the bulk of Venezuela's petroleum being refined in Curacao and Aruba, the United States would rank first as an exporter, and third as an importer of crude in the world after Canada and France.

U. S. Output Declining

Output of crude in this country is declining in comparison with the rest of the world—63 percent of the total production in 1933, just over 60 percent in 1936. Moreover, recent surveys indicate that the discovery of new oil reserves is barely keeping pace with production. Coming years will likely experience increasing imports and the eventual exploitation of oil shales and liquefaction of coal. Huge deposits of both coal and shale suitable for the production of oil exist in the United States. Moreover, Americans are members of the International Hydrogenation Patents group controlling the basic processes now utilized abroad for the manufacture of oil from coal.

For years American oil companies have been active in the production of petroleum in Mexico, Ven-

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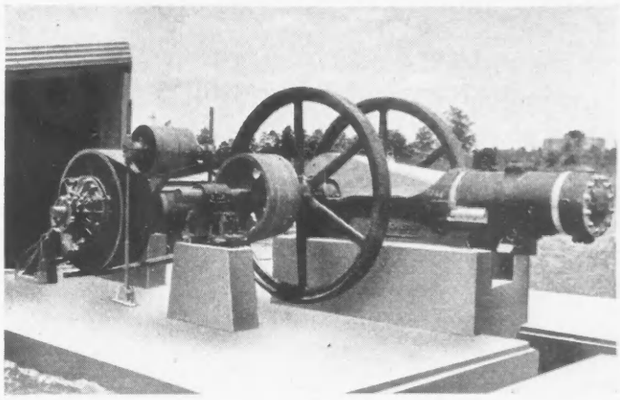

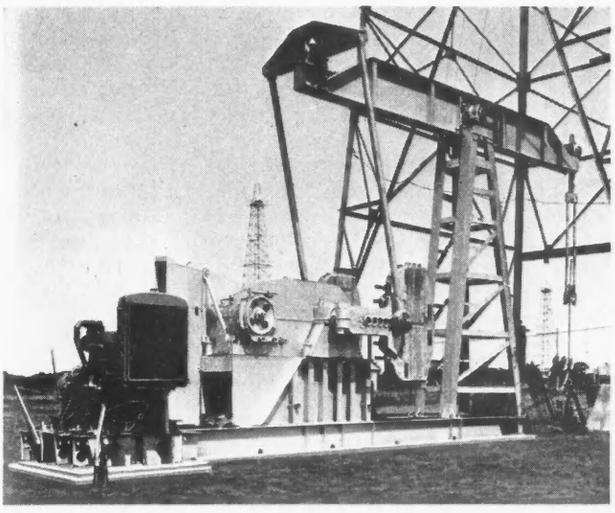

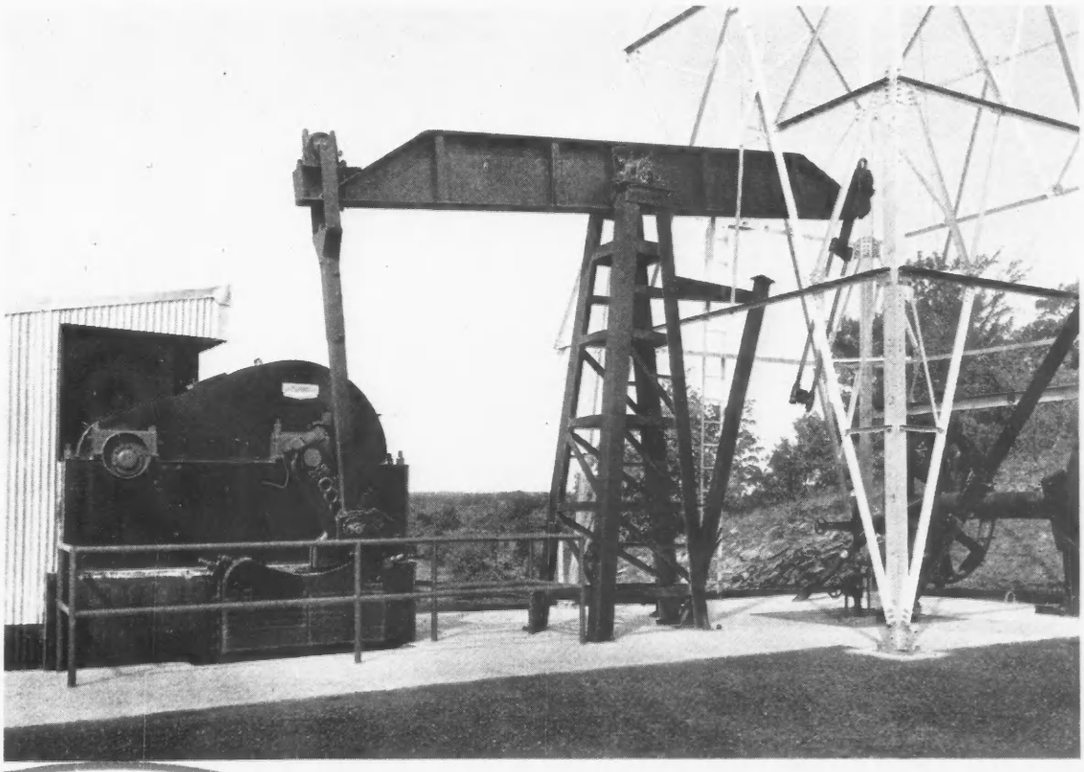

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ezuela, Colombia, Peru, Argentina, Rumania, Poland, Netherlands, India, and more recently in Bahrien Island; the 23¾ percent interest in the Iraq Petroleum Company, Limited, is largely financial, as the concession is under British control. In 1936, American foreign oil holdings were extended in many parts of the world: In Colombia the famous Barco Concession had an active program initiated for its early exploitation, and it is reported that by the purchase of a half interest in the Sociedad Nacional de Carrare further oil concessionary rights were acquired in the lower Magdalena Valley; options were recently taken up on two tracts, one of 500,000 acres and another of 850,000 acres, to provide expansion of workings in Eastern Venezuela; in Bahrien, production has been built up to approximately 3,500,000 barrels annually during the last four years, and exhaustive surveys are being conducted to test for oil in Saudi Arabia; additional acreage has been secured for operations in Sumatra, and, in partnership with the Royal Dutch Shell group, American companies are testing the oil possibilities of New Guinea; and finally toward the end of 1936 came the announcement that Americans were to receive oil concessions covering practically all of Afghanistan and much of North Iran.

Adjoining the rich petroliferous region of the Southwest Gulf is Mexico, second major producer of Latin America. Output increased slightly over the 40,240,000-barrel figure of 1935 in spite of several months of strikes. Production of light oil from Poza Rica field continued to rise, while the heavy crudes from Panuco and Faja de Oro persisted in their decline. Crude production of Petromex, the semi-official company slated for liquidation, has been built up from 395,000 to 1,800,000 barrels annually, and the company is thought to have received much of the best acreage incorporated in 1936 in the federal petroleum reserves of Mexico.

Venezuela Position Fixed

But for a five-week strike at the end of the year, operations in Venezuela continued at full activity throughout 1936, bringing production to 165,500,000 barrels, a gain of 14,000,000 barrels from the preceding year. The export trend—160,120,000 barrels were shipped in 1936 as against 143,120,000 in 1935—soon may be reversed if plans materialize for the construction of refineries in Venezuela. Announced schedules of major companies for expansion of operations indicate solid faith in Venezuela's future as a leading oil producer.

Trinidad is the largest oil producer among the countries of the British Empire, and, as might be expected, English companies account for practically the entire output of the Island. Production increased from around 11,680,000 barrels in 1935 to 13,000,000 barrels in 1936. All but a small portion of the crude is treated in local refineries. Trinidad has long sought without success preference for its petroleum in the United Kingdom.

Oil Code Helps Colombia

Increased interest in the exploitation of the petroleum resources of Colombia, due to a very recent liberalization of the Oil Code, is already evident as American companies speed up operations in the Barco and in the Magdalena Valley and a Royal Dutch Shell affiliate proceeds with extensive geophysical surveys of promising areas. Production in Colombia at 20,150,000 barrels represented a gain of nearly 3,000,000 barrels over 1935. Approximately three-fourths of Colombia's crude is refined outside the country.

Government to Drill in Peru

Peru's 1936 output of 17,500,000 barrels of petroleum was an increase of 500,000 over the preceding year. American operations supplied 85 percent of the total production, British nearly 15, and Peruvian less than 1 percent. Exports claim nearly 60 percent of annual production. The government of Peru may shortly undertake active exploitation of the state-owned oil fields at Zorritos, eight or ten miles from the present workings of Piaggio Brothers. Some $360,000 was appropriated during the 1935-36 period to conduct geophysical surveys, buy drilling equipment and pay salaries. Oil pay is expected at 1000 to 1600 feet.

Two British companies, Anglo-Ecuadorean Oilfields, Ltd., and Ecuador Oilfields, Ltd., dominate production of petroleum in Ecuador. Output from wells, all in the Santa Elena peninsula, amounted to approximately 1,850,000 barrels during 1936. Exports, estimated at 1,400,000 barrels, appear to have taken up the 150,000 barrel gain in production over 1935.

Argentine Imports Growing Fast

Rising domestic consumption of petroleum products in Argentina has kept ahead of the year-to-year progressive gain in local crude output. Production in 1936 at approximately 14,850,000 barrels registered an increase of 500,000 odd barrels over 1936. Details of imports are still unavailable, but some redistribution occurred, as shipments from Peru practically ceased due to retaliatory duties. Venezuela, Colombia and Ecuador likely benefited as imports from the United States, accounting for one-half of Argentina's crude purchases, underwent little change.

Yacimientos Petroliferos Fiscales, Argentine government owned oil company, was given practical control of the oil industry and trade in the summer of 1936. The Y. P. F. will apportion import quotas for crude and refined products and henceforth assume the lead in exploitation of the country's oil resources.

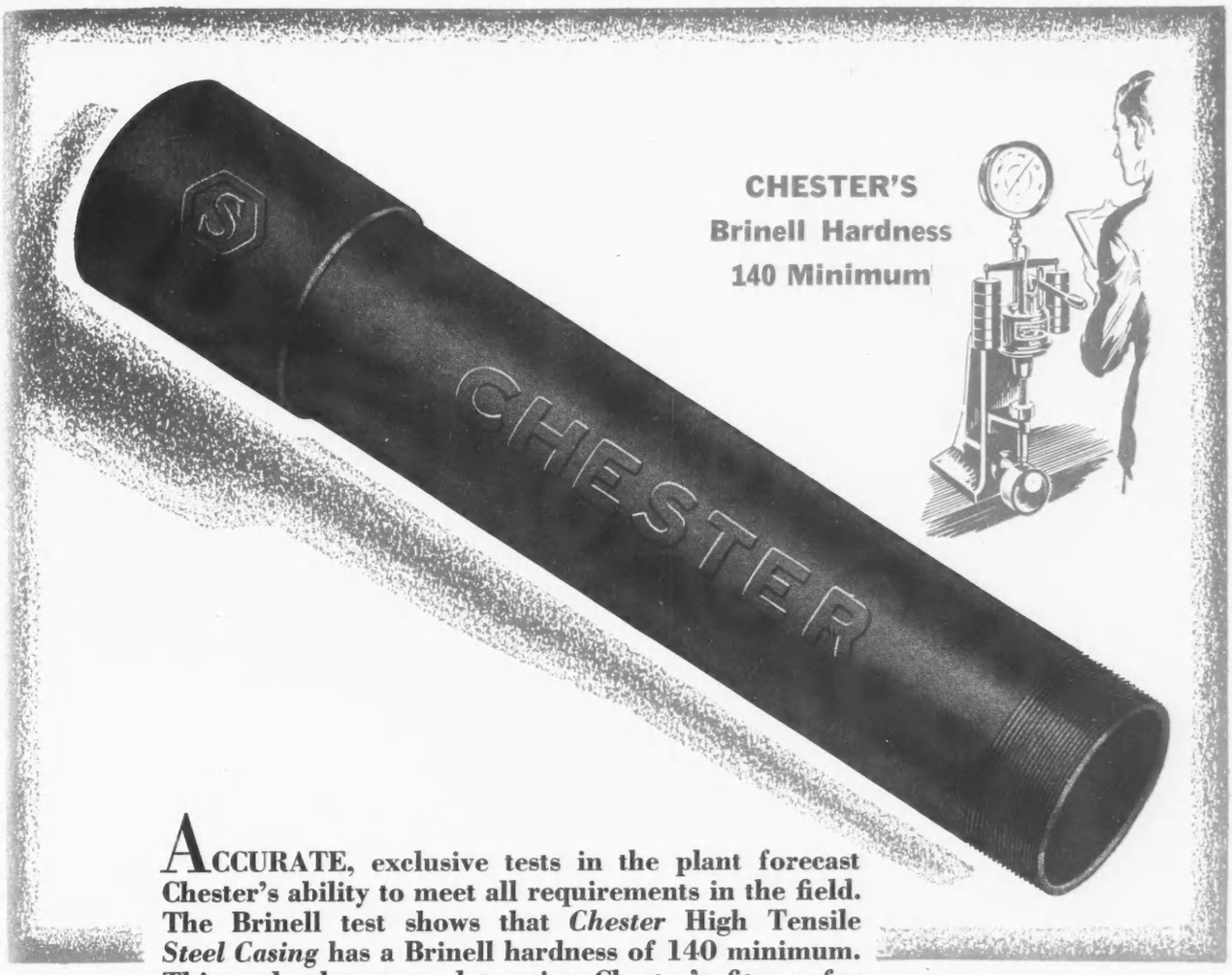
Intermittently for years the Magallanes area of Chile has been searched for petroleum, and drillings have revealed oil, but as yet apparently insufficient for commercial production. There is also said to exist vast deposits of oil shale capable of exploitation around Longuinay. For the present Chile will likely continue to import petroleum mostly in refined form, although the government sponsored C. O. P. E. C. Company is thought to be desirous of developing the refining of crude in Chile.

Production of an American company[1], only producer in Bolivia, has remained around 160,000 barrels annually during the last three years. There was recently created the Y. P. F. B., a Bolivian government company, to develop oil on state lands. Substantial development of the petroleum industry must await construction of pipe lines to adjoining countries or through neighboring countries to the sea.

Oil Showing Reported in Brazil

A survey, said to be favorable, of prospects for production of oil from the Riacho Dose area in

[1] Inasmuch as it is not in line with government policy to mention American companies abroad by name, the reader is referred to the insert map of the world which accompanies the February 22 issue of The Oil Weekly to make such identifications as are necessary.—*Editor.*



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Brazil was completed in 1936 by a German firm, and it is reported that only recently a good show of petroleum was found in a 40-foot well at Lohito, Bahia state. A small refinery is in operation at Uruguayana near the border of Uruguay, and the Ypiranga, S. A., Companhia Brasileira de Petroleo is soon to erect a refinery in Rio Grande. Pending possible development of substantial commercial production, Brazil will continue to provide consumption mostly with petroleum imported in the refined form.

Uruguay will bring in increasing quantities of crude to process at home instead of relying exclusively on imported refined products, if the refinery to be completed this year by Ancap, the government controlled oil company, is successful. A five-year contract for crude supply was given the Anglo-Ecuadorian Oil Company of Ecuador, a Royal Dutch Shell affiliate, operating in Ecuador.

Other Latin Americas Importers

Coming north, no petroleum refineries of considerable size are known to be operating in Paraguay, the Guianas, Central America, or countries of the Caribbean, except Cuba, where there is an American owned local refinery. Crude imports of Cuba were reported as 565,000 barrels in 1935, 773,000 barrels in 1936. Production of naphtha in the Motembo Basin is a factor of little or no consequence in providing a supply of petroleum products in Cuba.

Canadian refining capacity is geared to provide the bulk of domestic consumption of refined products, although local production of crude is small—around 1,500,000 barrels annually. Of the 35,560,000 barrels of crude imported in 1936, 25,700,000 came from the United States. Canada accounts for approximately half of the total crude exported from the United States. Colombia, Venezuela and Peru supply the rest. Several new small wells were reported brought in during 1936 in the Turner Valley field in Alberta, and special equipment, newly developed, is expected to permit commercial production of oil from the extensive beds of bituminous sands near the railroad terminus at Waterways, Alberta.

Not Encouraged by English Search

Numerous licenses were granted to explore for petroleum in the United Kingdom during 1936, but it is not thought that any findings will substantially increase present production of a few barrels daily. Geological formations in the British Isles are not generally favorable to oil accumulation. The country must rely on foreign sources of petroleum aside from about a million barrels of shale oil annually retorted from Scottish shales near Edinburgh and the production of synthetic oils from coal. Imports of crude at 14,625,000 barrels in 1936 were slightly higher than in the preceding year. As to origin, Iraq, Netherland West Indies, Peru, Iran and Venezuela supplied respectively 29, 20, 16, 15, and 12 percent. Transshipments from Curacao and Aruba almost entirely displaced imports from Mexico amounting to 2,550,000 barrels in 1935.

After much study of the Bergius and other patents, Imperial Chemical Industries, Ltd., assured of a substantial differential in favor of synthetic over imported gasoline, erected at Billingham a large plant for the hydrogenation of coal and heavy oils. Subsequent improvement of the original processes enabled an output of approximately 960,000 barrels of synthetic gasoline during 1936. Recent advices, however, indicate that while the problems of commercial production have been met, the present high cost of synthetic gasoline is apt to discourage the building of more liquefaction plants, at least during the next few years.

British Nationals Active

British nationals are engaged in the exploitation of petroleum resources in every major oil producing country, including the United States, except Russia, the Island of Bahrien and Colombia, and in the latter country inactive concessions are held by English companies. For years the oil scouts of the Royal Dutch Shell combine and the Anglo-Iranian Oil Company, Ltd., have searched the world for likely oil bearing structures, and as a result these two groups are thought to possess options covering much of the land remaining, not under concession, believed to contain oil. The Anglo-Iranian Oil Company, Ltd., a British government controlled company, has had a monopoly of the production of Iran, and the concession recently reported to have been given an American interest is not likely to seriously alter for many years the oil status quo in that country.

Who Controls Iraq

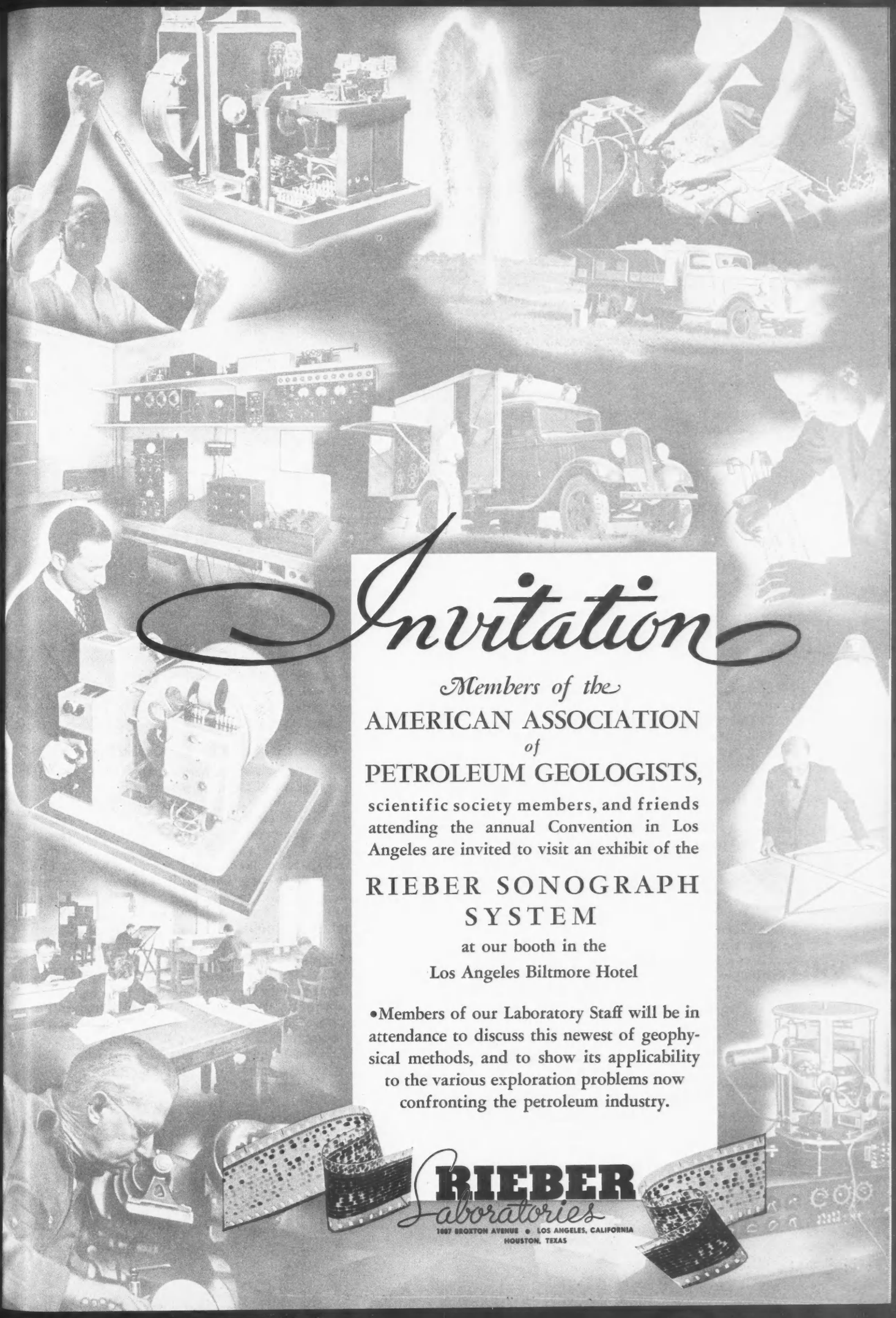
American and French companies each hold a 23¾ share in the petroleum of Iraq, but British control is assured by the 47½ percent interest of the Royal Dutch Shell and Anglo-Iranian groups. British control of oil in the Middle East was further strengthened in 1936 when the Italian owned shares of the Mosul Oil Company, holder of the oil concession west of the Tigris River, were purchased by the Iraq Petroleum Company, Ltd., and a subsidiary of the same group is reported to have secured rights to develop much of the remaining areas of Arabia thought likely to contain oil, not included in the sphere of American Bahrien operations. In Sumatra and Dutch Borneo the Bataafsche Petroleum Maatschappij, one of the two original companies of the Royal Dutch Shell combine, received in 1936 possibly the most promising of the new oil lands thrown open to exploitation. As previously mentioned, British and American companies are cooperating to determine the oil possibilities of New Guinea. More complete details of British activity in the major oil countries are not yet available, but it is improbable that English oil interests in 1936 were less enterprising than in preceding years.

Only Two Can Meet Domestic Demand

Only the United States and Russia, of the major powers, are in a position to meet total domestic demand from petroleum produced within their continental limits. For several years these two countries competed for the rank of world's largest producer; then between 1898 and 1902 development of the rich shallow sands around Baku enabled Russian output to exceed production in the United States. At the close of the World War the production of petroleum in Russia was badly disorganized, and not until 1925 was there substantial improvement; in 1931 Russia overtook Venezuela to capture second place among the oil producing countries of the world.

Russian Industry Revamped

The revamping of Russian industries, coupled with a rise in the standard of living, has raised substantially domestic consumption of refined petroleum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products. In meeting this demand exports have been reduced from nearly 6,000,000 barrels in 1933 to around 1,000,000 barrels in 1936. Preliminary estimates of production at 215,578,000 barrels during 1936 represent a gain of 22 percent over the preceding year, the best showing of any major oil producing country except Bahrien, where output more than doubled between 1935 and 1936. According to reports, recent geological surveys have added vastly to Russia's already large proved reserves, not only in the old fields of Azerbaijan and Grozny, but in Maikop, Emba and the newer fields of Central Asia and Turkestan.

Poland's Decline Continues

Faced with declining petroleum production from year to year—6,000,000 barrels in 1925 and 3,600,000 barrels in 1936, Poland has practically suspended crude exports, insisting, however, on exports of refined products in excess of domestic demand. While not actually a monopoly, the petroleum industry and trade of Poland is subject to strict regulation by the government. Although considered, water flooding to increase production is not thought to be adaptable to conditions in Poland.

Reports during 1936 indicate a continuous renovation and expansion of plants for the retorting of Estonian oil shales. These deposits are estimated to contain 5,000,000,000 tons of workable shale. Production in 1935 is reported as 330,000 barrels of crude oil and 51,000 barrels of gasoline. As a source of limited oil supplies Estonia is of interest to nearby countries, but it is likely to remain a relatively unimportant factor in the petroleum industry and trade of Europe.

Seek Rumanian Crude

Rumania, after Russia, is the largest oil producing country in Europe. Its excess of crude over requirements for domestic refining, around 4,000,000 barrels in 1936, have been the object of numerous trade and clearing agreements. Most significant of these is that for the sale to France of much of the Rumanian government's oil royalties, averaging about 12 percent of the total crude production, as this petroleum is normally made available to the independent refineries. Aside from the usual year to year agreements subject to exchange control, both Czechoslovakia and Yugoslavia are reported negotiating for long term petroleum supplies from Rumania.

German Position Interesting

The German oil position is of especial interest in view of the government's announced determination to achieve independence of foreign supplies of petroleum by the middle of 1938. Seriously impressed since the World War by its deficiency of petroleum and lacking funds to undertake large scale exploitation of oil deposits in foreign countries, Germany early turned to the use of synthetic fuels.

During 1935 and 1936 approximately 6,000,000 barrels of crude petroleum, divided nearly equally between domestic production and imports, were available for processing in Germany. Of the imports Mexico furnished close to five-sixths; the remainder came from Venezuela, the United States and Rumania. Well over three-fifths of the total German refining capacity is located in and around the free port of Hamburg. Finished products entering Germany are dutiable at the same rates as similar oils of foreign origin, but the products of the Hamburg refineries may be shipped to other countries subject only to the customs charges levied by the countries of destination.

Progress of Liquefaction

Fortunately for Germany in its struggle to achieve independence in oil, there is easily available an abundance of coal and lignite suitable for liquefaction and the production of benzol, and the services of men highly skilled in industrial chemistry and engineering, including those responsible for developing the Bergius, Fischer-Tropsch and other basic processes for the hydrogenation of coal and oil. Eleven coal liquefaction plants are now in active operation, and at least three more are under construction. These vary in size from the huge Leuna works of the I. G. Farbenindustries A. G. with facilities for producing around 3,000,000 barrels of gasoline annually to small works of 8,000 to 9,000 barrels capacity in Westphalia and Hanover Provinces. Combined capacity of all plants is reported to be well over 9,000,000 barrels annually, theoretically sufficient to meet approximately three-fourths of current demand for gasoline. Domestic benzol output of cokeries and illuminating gas plants amounted to roughly 2,800,000 barrels during 1935. Presumably production of substitute fuels could be increased for admixture with gasoline now compulsory in Germany.

By the end of 1936 France had completed refining capacity, intended, with annual extension and modernization, to meet practically the entire domestic demand for refined products. Having a yearly production of scarcely 500,000 barrels, it is necessary for France to import nearly all the crude processed in local refineries. In 1935 crude imports were divided on a percentage basis as follows: 46 from Iraq; 22 from the United States; 9 from Peru; 8 from Venezuela; 7 from Colombia, and 4 from Netherland India.

French Money in Other Countries

In addition to Iraq, French capital is heavily invested in the production of petroleum in Rumania and Poland, but these countries, particularly Poland, prefer to refine their crude at home. Only Morocco of the French overseas empire seems at present promising as a source of oil. A good grade of crude is reported to have been found at around 1,700 feet at Djebel Tselfat and Djebel Bou Draa. At least one French company with state aid is planning to prospect for oil in Tunisia, Madagascar, and French Equatorial Africa, and a private company was organized in 1936 to exploit the mineral resources, including petroleum, of Indo-China.

As with other countries, it is the uncertainty of petroleum supplies in time of war that has made France synthetic fuel conscious, notwithstanding that the country is now in position to supply the domestic demand for refined products from imported crude processed in local plants. There are now operating two hydrogenation plants capable of a combined annual output of 85,000 barrels, one at Lievin, the other at Bethume; a third at Courrieres, if built as planned, will use the Fischer-Tropsch process and have an annual capacity of approximately 215,000 barrels.

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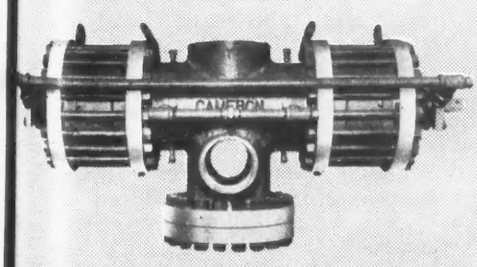

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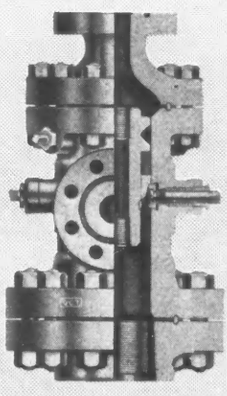
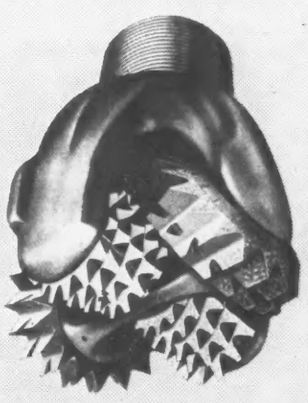
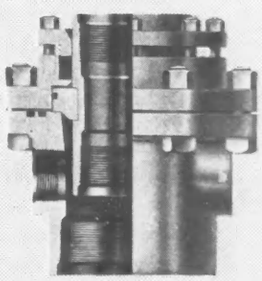


O-C-T TUBING HEAD



REED SPORT MODEL BIT



RECTOR CASING HEAD

than experimental, but there was recently submitted to the French government a proposal for erecting coal liquefaction plants sufficient to supply 2,500,000 barrels of motor fuel, about one-tenth of yearly consumption. Adequate customs protection and subventions for equipment for the new plants were included in the proposal. France, as Germany and Italy, requires the admixture of alcohol and benzol with gasoline.

An uninterrupted flow of petroleum imports brought Italy safely through the Ethiopian crisis. Accumulated stocks were soon exhausted and, domestic production of barely 150,000 barrels annually obviously could mean little toward meeting ordinary consumption, even less the abnormal demands of military operations. Official details of Italian imports of petroleum for 1935 and 1936 have not been released. It is probable that incoming crude shipments in 1935 exceeded 1,500,000 barrels with a moderate decline in 1936.

Italy Nationalistic

The Facists early initiated, and have since steadily strengthened, a well defined policy intended to effect full development of domestic fuel resources, secure foreign sources of petroleum and bring under state control the production, importation, refining, distribution, and sale of petroleum and products in Italy. Two government controlled companies have been set up to engage in the oil business. The first, Azienda Generale Italiana Petroli, has taken over domestic crude production, operates refineries for the processing of both local and foreign crude, distributes finished products in competition with other oil companies in the Italian market, and is, in effect, the parent government oil company. The Azienda Italiana Petroli Albania was formed to exploit the petroleum of Albania. Early in 1936 there was organized the Azienda Nactionale Idrogenazions Combustibli, with capital supplied by the foregoing state oil companies and the Montecatini interests for the manufacture of synthetic fuels. The new combine will operate plants at Bari, Livorno and near Florence. Presumably heavy Albanian crude will be hydrogenated at the Bari refinery.

As previously mentioned, the Italians have withdrawn from the Mosul Oil Company. It is said, however, that by a special convention Italy may still acquire substantial supplies of petroleum from Iraq. Efforts are being concentrated upon production of oil in Albania where full development is expected to yield from 2,000,000 to 2,500,000 barrels annually.

Busy in Ethiopia

The extent of petroleum deposits in Ethiopia is not known; two parties of Italian geologists are now investigating the oil possibilities in the provinces of Hararino and Ogaden.

As a part of attaining national sufficiency in fuels, Italy has not overlooked the use of alcohol, benzol, compressed gasses, etc. Admixture of alcohol is compulsory, and by law all auto buses must be adapted by the end of 1937 to operate on gases from wood and charcoal or on synthetic fuels.

The Netherlands, Belgium, Austria, Hungary and Czechoslovakia each import in excess of 1,000,000 barrels of crude annually. Only Austria and Czechoslovakia have developed commercial production—60,000 and 150,000 barrels respectively in 1936. Spain, including the Canary Islands refinery, accounted for nearly 1,000,000 barrels of crude imports in 1935. Yugoslavia, Denmark, and Sweden are each accredited with approximately 500,000 barrels of incoming shipments of crude a year. Sizable refineries are not known to be operating elsewhere in Europe.

Egyptian Investigations

Egypt is the only country in Africa having important production of petroleum. Output at Hurghada has steadily declined in recent years to approximately 1,300,000 barrels annually. It was reported late in 1936, however, that certain areas in the western desert, along the Red Sea coast and in the Peninsula of Sinai were being investigated as possibly containing oil. Imports of crude, almost all from Iran, average 750,000 barrels a year.

South Africa has no well production of petroleum although some crude is being imported in connection with the production of oil from torbanite, oil shale of which the Union is said to possess extensive deposits. Domestic demand for petroleum products continues to be met largely from imports.

No Crude Imported by India

Details of production, exports of crude and extension of working oil properties, and granting of new concessions are as yet incomplete for Netherland India, premier petroleum producing country of the Far East. Production for 1936 based on partial year estimates probably declined slightly from the preceding year's figure of 42,570,000 barrels.

Considerable portion of the consumption of petroleum products in India, not provided by the output of local refineries operating exclusively on indigenous oil, is met by imports in the refined form. Crude petroleum is neither exported from, or imported into, British India. Production, exclusively in the hands of British and Indian companies, amounted to 9,600,000 barrels in 1936, slightly higher than in the preceding year.

Japan Anxious Over Supply

Consumption of petroleum products has risen rapidly in Japan in recent years while domestic production, notwithstanding generous government subsidies, has remained practically stationary at around 2,000,000 barrels annually. Anxiety concerning this growing dependence on foreign crude supply, most of which might be cut off in event of war, has brought about the rigid control of the importation, refining, storage and marketing of petroleum products in Japan (domestic production has long been in the hands of the country's own nationals) and efforts, including government financial assistance, to develop oil resources abroad and, more recently, the inauguration of an extensive program at home for the liquefaction of coal.

The lumping together of Japanese purchases of crude, gas oil and fuel oil prevent accurate determination of the amount of petroleum brought in for refining. Imports of heavy oils during 1935 amounted to 21,875,000 barrels, an increase of 3,500,000 barrels over 1934, and a further gain is indicated for 1936. Of the incoming shipments in 1935 the United States furnished three-fourths, Netherlands India one-eighth, British Borneo and scattered countries the remainder. The question of maintaining six months' stocks was amicably adjusted in 1936. The Minister of Commerce and Industry was empowered under certain conditions to pay indemnity on stored oil

A FEW ADVANTAGES
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7. **Smaller warehouse stock of repair parts**
8. **Fewer accidents**
9. **Less fire hazard**
10. **Not affected by bad weather or shortage of water**
11. **Not affected by sour gas or gas shortage.**
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13. **Easy to start in any weather**
14. **Operation can be controlled automatically**
15. **Counterbalancing more easily accomplished**
16. **High salvage value in electric equipment—easily moved**
17. **Pumping with electricity may reduce the cost of electricity for other purposes around the lease**
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21. **LOWER OVERALL COST, PER BARREL, OF FLUID LIFTED**

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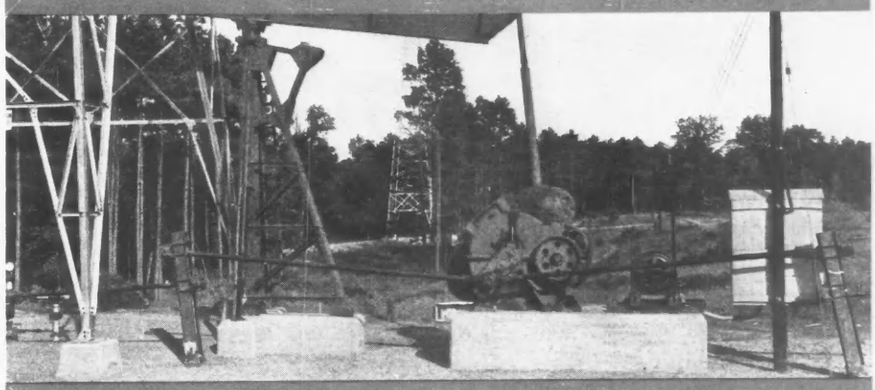

Consider pumping, for instance. Electric Power is the right power for the automatic operation of wells on intermittent schedule in prorated fields.

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PETROLEUM ELECTRIC POWER CLUB

and British and American interests arranged to rent additional storage facilities from Mitsui Bussan Kaisha.

Japs to Continue on Sakhalin

Since 1925 both Russian and Japanese companies have worked the oil fields of North Sakhalin and in October, 1936, an extension of the original agreement was signed permitting further exploitation by Japan of the petroleum resources of Sakhalin. Annual output of crude is close to 3,000,000 barrels. Efforts to expand the oil production of Japanese holdings in Dutch Borneo, to date small, are indicated by a recent report of a proposed combine of the Mitsui, Mitsubishi and Sumitomo interests for the purpose of producing petroleum overseas. Production of gasoline from Fushan shale is expected to exceed 100,000 barrels during 1936, and extension of cracking facilities will permit a substantial increase in 1937.

Subsidizes Coal Liquefaction

The 1937-38 Japanese budget carries an item of 22,200,000 yen for the purpose of subsidizing coal liquefaction and possibly the expansion of alcohol production. Three plants for the manufacture of oil from coal are now in operation, four more are now under construction and at least nine other similar enterprises are being considered for employing various processes for the hydrogenation and low temperature carbonization of coal, lignite and tars. Foremost among these projects is the Army-Navy proposal to obtain Diet approval for 100,000,000 yen to form the Imperial Fuel Development Company, Ltd., to assure a supply of synthetic oils for the military establishment.

May Extract Shale Oil at Newnes

The availability of government subsidies in 1936 of approximately $1,250,000 for drilling operations does not appear to have uncovered any oil areas of particular promise in Australia and its territories. Gasoline from shale oil has been unable to compete with the imported gasoline, but twenty years protection to the extent of Customs and Excise duties, now assured, should permit economic exploitation of the Newnes shales in New South Wales. Australia currently imports 1,500,000 to 1,750,000 barrels annually for domestic refineries, practically all of which comes from Netherlands India and Iran. Liquefaction of coal, of which supplies are plentiful, will probably await further demonstration of its possibilities in England.

Plan Taranaki Test

It is now proposed to test for oil in the Taranaki region of New Zealand; thus far a few scattered drillings have disclosed no petroleum deposits meriting exploitation.

A small oil well was reported as brought in in Cebu Province of the Philippine Islands in 1936, and interest has been keen among several local companies organized to take up leases and search for oil. Earlier surveys by major companies, however, indicate little expectation of substantial findings of oil.

A backward glance over the foregoing resume of world crude production and transport to refineries discloses obvious inequalities of supply and determined efforts on the part of those countries lacking adequate oil to remedy their deficiencies. The bulk of production, excepting where exploitation is restricted to nationals, outside Russia, is being developed by the two great English speaking powers; otherwise, active foreign oil operations are confined to France, Italy and Japan, and the Netherlands in partnership with Britain. And whatever the trend toward nationalization of the petroleum industry and commerce in its products, becoming more and more the policy of leading nations, both producers and non-producers, for many years the oil status quo is likely to remain among the countries just mentioned. Such appears the future status of natural petroleum. The possibilities of synthetic fuel production may conceivably alter the "balance of power in oil."

Liquefaction of coal is receiving serious consideration, depending on the extent of the given country's oil deficiency, wherever there exist suitable deposits of coal and, shales capable of producing oil are being increasingly exploited. Only the sale of gasoline diluted with alcohol, benzol, and other substitutes is permitted in many countries and, the operation of motor vehicles on gases—wood, charcoal, compressed petroleum, etc. has become a commercial reality, at least in Germany and Italy. Can synthetic fuels be manufactured cheaply enough to provide the have-not countries with independence of foreign natural petroleum? Whether yes or no, the question of adequate fuel supplies will remain of paramount concern to every industrialized country.

1936 World Production by Countries

Barrels of 42 Gallons

(Figures from The OIL WEEKLY Added to Article by Editor)

Country	Barrels	Country	Barrels	Country	Barrels
Rumania	61,471,172	United States	1,097,640,000	Italy	150,000
Canada	1,482,000	Russia, except Sakhalin	215,578,060	Poland	3,579,000
Japan and Taiwan	2,000,000	Germany	3,080,400	British India	9,598,600
Netherland India	42,217,900	Peru	17,541,600	Mexico	40,368,183
Argentina	14,850,000	Trinidad	13,022,000	Egypt	1,231,700
Iran	57,363,600	British Borneo, (Sarawak and Brunei)	4,597,000	Ecuador	1,851,600
Venezuela	165,452,400	France	531,120	Czecho-slovakia	185,000
Sakhalin	2,851,000	Colombia	20,512,800	Iraq	29,405,815
Bolivia	160,000	Bahrein	3,400,000	Others	108,000
				Total World	1,810,229,950 barrels

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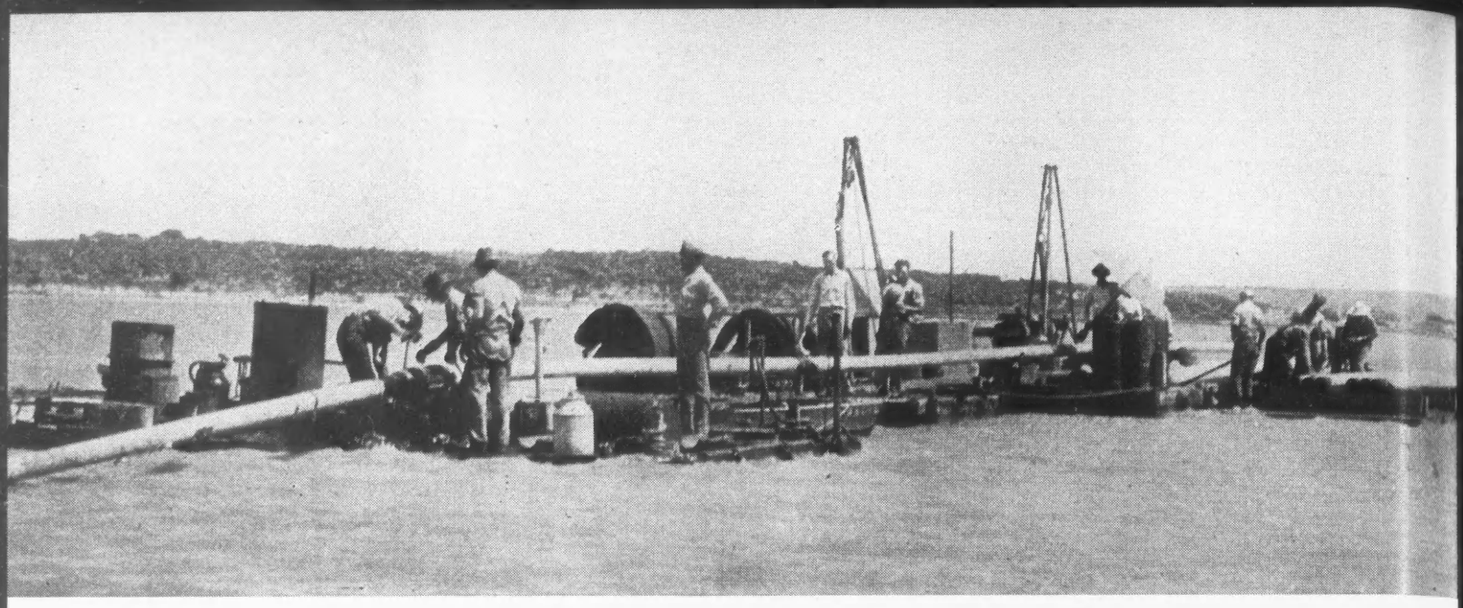
ALLOY STEEL DIVISION . MASSILLON, OHIO

REPUBLIC STEEL



The section of line across Old River Lake was laid by use of shallow-draft barges

INTERESTING METHODS ARE USED IN RAPID CONSTRUCTION OF NEW

Gulf Coast Gas System

By H. E. SMITH
Apex Construction Company

ONE of the largest gas pipe line projects that has been constructed in the Gulf Coast in a number of years was completed March 1. This line marks the beginning of a system of gas transmission by Humble Oil & Refining Company, which at the onset assumed the proportion of a major project.

Details of System

The system in general consists of the following construction: 66 miles of gathering lines in the Tomball field ranging in size from 3½-inch to 16-inch pipe; 30 miles of 10¾-inch pipe from the Tomball field to Dawes Junction, where it connects into a present line previously known as the Pan American line and extending to Baytown, Texas; 71½ miles of 10¾-inch pipe from Humble's Baytown refinery to a point near Port Acres, Texas. At this point the line divides into a Y formation, one branch extending to Port Arthur and the other to Port Neches.

An 8-inch line approximately 6 miles in length was tapped into the line directly north of Anahuac and laid to take gas from that field.

This system was constructed to furnish industrial gas to various refineries at Baytown, Port Arthur and Port Neches, Texas.

The Tomball gathering system now is being constructed by Apex Construction Company of Houston, Texas. That portion of the line from the Tomball field to Dawes Junction is under contract to Oklahoma Contracting Corporation of Dallas, Texas. The remainder of the line from Baytown to Port Arthur and Port Neches was under contract to Apex Construction Company, general contractors, who sub-let the stringing to Union City Transfer Company of Beaumont, Texas, and the welding, which was done by the electric process, to H. C. Price, Inc., of Bartlesville, Oklahoma.

General Construction

The pipe for this project was in 40-foot random lengths, weighing 40.48 pounds per foot except the sections of the line across Old River Lake, Trinity River and bayou crossings, where a heavier pipe weighing 43.68 pounds per foot was furnished.

The pipe was doped and wrapped at yards set up along the line. This work was done by Mayes Bros., Inc., of Houston, Texas.

In recent years a considerable portion of all pipe laid in the Gulf Coast territory has been painted and wrapped at the pipe mills as it has been found advantageous to supply the pipe to the contractors already painted, thereby eliminating the excessive cleaning operations in the field in order to remove the mud and silt that naturally adheres to the pipe during the stringing operation. Recently the mill wrapping method has been replaced with the idea of wrapping the pipe in yards erected near the sight of

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Wooded sections made hard going for heavy equipment, as this back-filling scene clearly shows.

construction. This eliminates the damage to the coating resulting in shipment from the mills and reduces to a minimum the patching of the coating that has heretofore been made along the line during the construction. Considering all hazards the latter method of coating seems to be preferable.

The pipe was taken from these coating racks and strung on the line. Due to weather conditions the stringing contractor found it necessary to use a number of tractors and sleds in order to move over the right-of-way, special care having been given to the padding of the bolsters on all conveyances in order to prevent damage to the pipe coating.

The first joint of pipe was laid on December 19, 1936, and until the last three weeks of the construction period the contractor was handicapped with incessant rains thereby rendering the right-of-way almost impassable to the equipment. Due to this condition it was decided to lay the bell-hole welding joint, known to the pipe line fraternity as the stove pipe method.

That section of the line across Old River Lake was laid by using shallow draft barges equipped with tripods and winches for use in handling the pipe. A portion of this crossing was covered with water to a depth of only 3 inches and at these places a dragline was mounted on the barge and a channel was dredged to the bank. Through this channel the pipe was moved for stringing on the island between Old River Lake and the Trinity River and the lake crossing proper was laid. The portion of the line between Old River Lake and the Trinity River was subject to overflow and on account of the steady rainfall the work at this location was postponed until the last week of the construction period waiting for the water to recede from the maximum depth of four feet to which it had risen. Due to the presence of the water at this time of the year, Humble Oil & Refining Company engineers decided that it would be good practice to install river clamps on a portion of this stretch in order to make the line safe for future overflows.

The Trinity River crossing was made according to government specifications and the usual pipe line practice of welding the pipe in a string of sufficient length and then pulling it across the channel with the assistance of barges and other marine equipment.

The section of the line adjacent to the west bank of the Trinity River contained a swamp of approximately 1400 feet in width. The major portion of this section was welded in strings and pushed into place. There were bayou crossings which were layed by the same method.

The first 30 miles of the line was through a wooded territory and, therefore, necessitated considerable right-of-way clearing. This wooded territory ran true to form with other wooded sections of the Gulf Coast district and on account of the presence of numerous quick sand holes considerable difficulty was had, necessitating the use of a large quantity of boards and timbers in order to road the heavy machinery along the line.

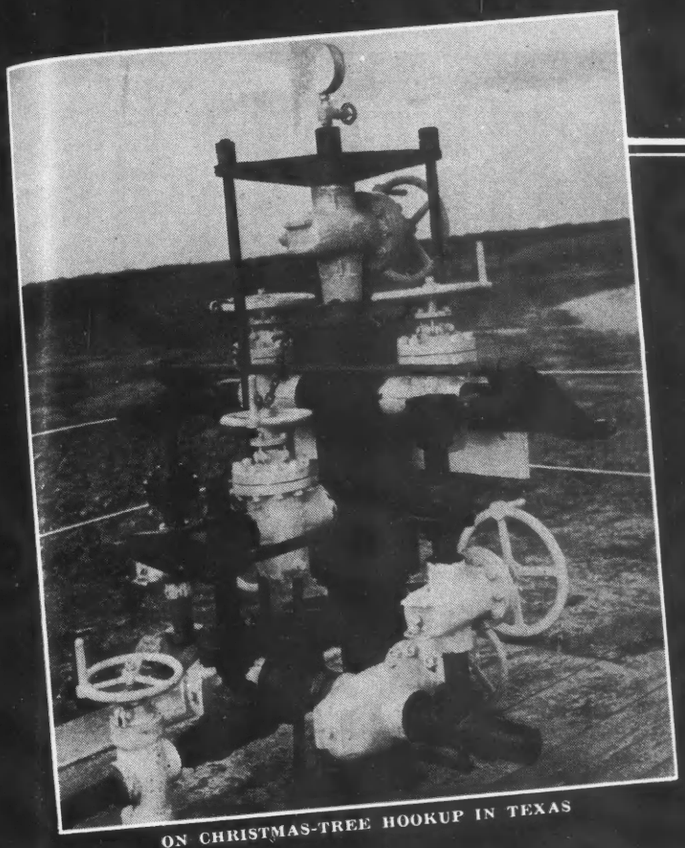
Due to the weather and the conditions of the wooded territory the welding contractor experienced considerable difficulty in the movement of his equipment. The use of sleds has long since replaced the oil field wagon in the Gulf Coast. However, in this case a different type of sled was necessary. It was found that the only sled practical must be constructed with solid flat bottom for which thin sheet iron was used, making it into a flat bottom boat or mud scow.

Special mention is due to be made concerning the quality of welding done. On account of the decision to use the stove pipe method it was necessary to bell hole weld each joint. This condition of welding requires a better grade of workmanship, but in spite of this fact there were no faulty welds found in the line and none of the welders were removed as the result of coupon tests.

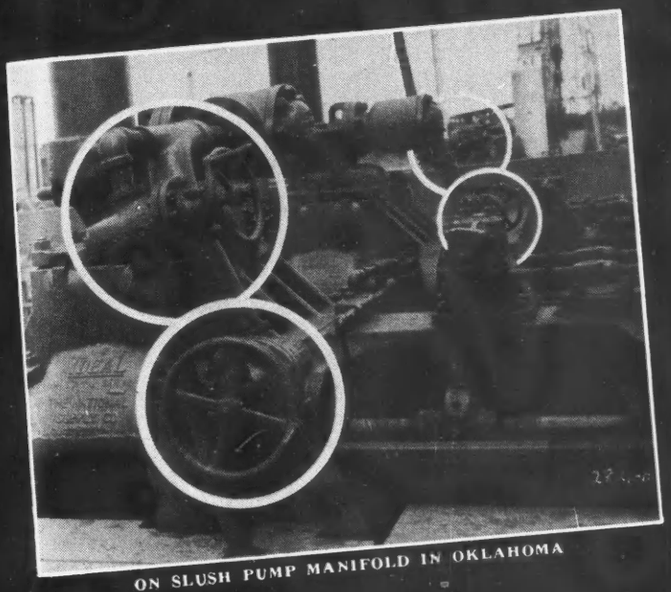
Due to the wet condition of the ground and the presence of a number of quick sand deposits considerable trouble was had from ditches caving and in a number of places it was necessary to excavate the trench by means of a dragline. At most of these places it was necessary to construct special wooden mats in order to move the dragline along the ditch.

During the last three weeks of the construction period the operations were carried on under more favorable weather conditions and in this period the major portion of the line was constructed.

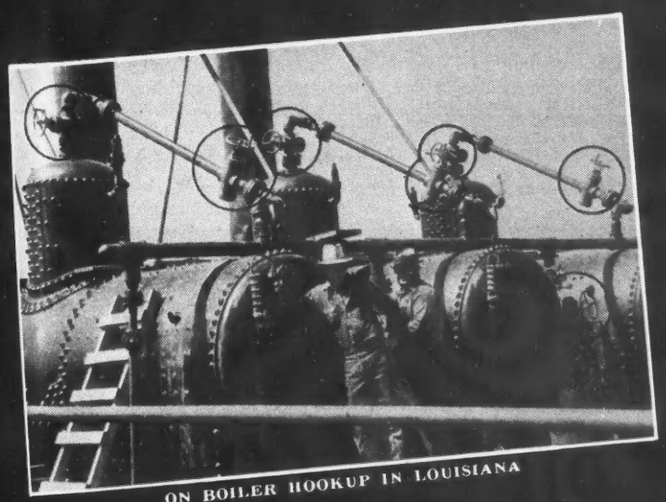
In conclusion tribute is given to the Humble organization for the cooperation given all the contractors in order that the line might be laid in as efficient manner as possible. All difficulties were quickly adjusted and very little friction was in evidence between contractor's employes and the company inspectors.



ON CHRISTMAS-TREE HOOKUP IN TEXAS



ON SLUSH PUMP MANIFOLD IN OKLAHOMA



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Markets Favorable

REFINED PRODUCT PRICES ARE STEADY AND CRUDE IS FIRM

THE market situation continues generally favorable, with most prices steady at the established levels.

Although there have been some fears that recent peak rates of crude oil production might lead to market difficulties, the heavy output is being well absorbed, and so far has not resulted in unjustified additions to storage of either crude or products.

The refined oil markets, consequently, remain steady and the crude markets are firm. There are still hopes that crude prices may be raised further to moderate extent in the spring or summer.

Gasoline Prices Steady

Comparatively mild weather has helped to preserve stability in the gasoline markets, and prices last week were generally the same as in the preceding week.

Although gasoline stocks have been increasing, the additions have been about normal, closely approximating those at this season in the past several years.

While gasoline inventories currently are about 8 percent greater than at this time last year, demand is running similarly higher. The Bureau of Mines estimated that the gasoline demand this month will be 9 percent greater than in March, last year.

Fuel Demand Holds Up

Fuel oil consumption continues comparatively heavy, particularly in view of the mildness of the weather. Heavy fuels are reported scarce, and the prices of the light fuels are steady, despite some recent increase in offerings.

Kerosene is closely held in the Mid-Continent, and prices are steady.

Tank car prices last week continued generally unchanged from the previous week.

U. S. Motor gasoline prices f.o.b. Oklahoma refineries were ranging from 4⅝ to 5 cents a gallon for the third grade, 62 octane and below; from 5⅛ to 5½ cents for the second grade, 63 to 67 octane; and from 5¾ to 6 cents for the 68 to 70 octane material.

In the Chicago market the corresponding prices were 4½ to 4¾ cents, 4¾ to 5 cents, and 5⅛ to 5¾ cents.

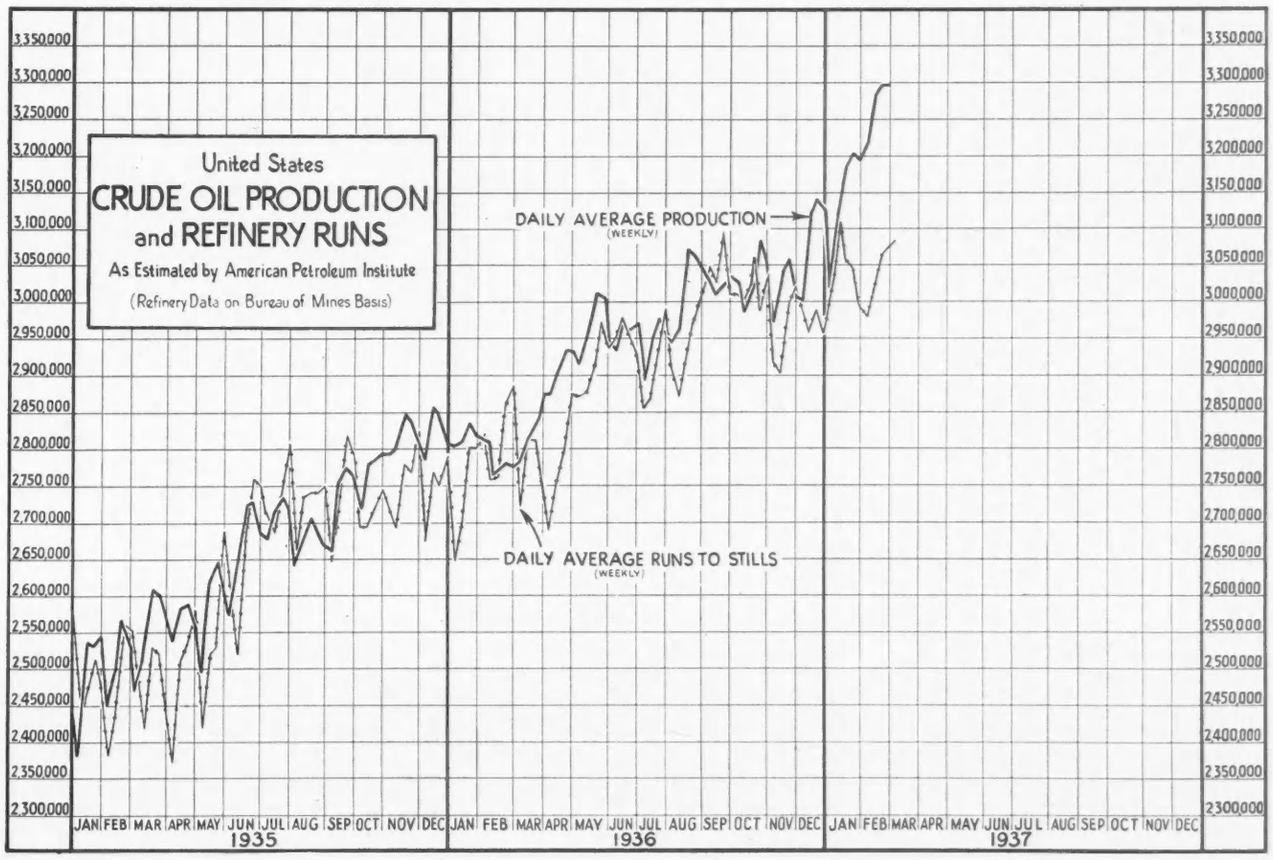
At the refineries in East Texas the usual third grade gasoline on the market was priced commonly at 4¾ cents a gallon.

Kerosene and Fuel

Kerosene prices at the Oklahoma refineries ranged last week from 4⅛ to 4⅜ cents a gallon for the 41-43 water white grade, and from 4¼ to 4½ cents for the 42-44 water white grade. The same minimum prices prevailed in the Chicago market, but maximum prices were not as high by ⅛ cent.

In the Chicago market the No. 1 white burning oils were priced from 4 to 4⅛ cents a gallon, and the No. 1 straw from 3¾ to 4 cents. The No. 2 straw was 3⅝ to 3¾ cents, and the No. 2 dark from 3½ to 3⅝ cents. No. 3 oils were 3½ to 3⅝ cents a gallon.

For industrial consumption, the heavier oils were priced at 95 cents to $1.05 a barrel for the No. 4 grade, 85 to 90 cents for the No. 5, and 82½ to 87½ cents for the No. 6 grade.



TO STUDY PLAN

May inject water into East Texas sands

Austin.—The Texas Railroad Commission has issued a notice that the next statewide proration hearing will be held in Austin on March 19.

Beside the usual announcement the notice states that the commission will take evidence "as to the feasibility of returning the salt water produced with the crude petroleum oil in the East Texas field to the reservoir in order to attempt to reduce the drop in reservoir pressure."

Tests have been made which indicate that such a program is practical. It is probable that the plan would entail a revision of the method of proration to provide for fixing of allowables on the basis of volumetric displacement, or total daily withdrawal of fluid from the reservoir.

Should this be done, many wells now making large volumes of water would probably be worked over in an effort to increase the proportion of oil produced.

NAVY REVENUE

Reserves make fair profit in 16 years

Washington, D.C.—Revenues of $52,000,000 were secured by the Government between July 1, 1920, and June 30, 1936, from the naval oil reserves, it was disclosed this week in testimony taken by the House appropriations committee during its hearings on the naval appropriation bill for the coming fiscal year. Expenditures of the Government in connection with the reserves in the same period were $1,354,656.

Of the total collected, rents and royalties accounted for $16,236,405, while $13,013,151 was secured under a settlement with Pan-American Petroleum Company and $5,500,000 under a compromise with the same company; $11,106,835 from the receivership in Naval Petroleum Reserve No. 1; $3,000,282 from the receivership in Reserve No. 3, and $2,906,484 from a settlement with Sinclair Crude Oil Purchasing Company.

While several important suits are pending, under which the Government is seeking to recover large sums from claimants on the naval oil reserves, the committee was told by Captain H. A. Stuart, director of the naval petroleum reserves, one case is considered of primary importance since it "undoubtedly will form a precedent and determine what authority the Secretary of the Navy may exercise over lessees in the naval petroleum reserves in order to carry out the Government's policy of conserving the oil and gas content thereof in the ground as long as possible."

The case, Captain Stuart explained, arose out of the denial by the Secretary, on January 18, 1935, of a plea of Pan-American Petroleum Company for permission to deepen its well 7-F, in reserve No. 1, in order to explore deeper formations in search of new, undeveloped productive oil sands.

Suit was filed in California in April, 1936, by William C. McDuffie, receiver of the company, seeking an order reversing the Secretary. A motion to quash the petition was filed by Government counsel on the ground that the Government cannot be sued without its consent and that the court in the receivership case had no jurisdiction in the matter.

An opinion handed down by the court last October overruled the Government's motion to dismiss and held that the Government could not admit the contract to be binding and at the same time refuse to permit the court to interpret it. The case has been appealed by the department and undoubtedly eventually will come before the Supreme Court.

CRUDE PRICES

Complete table of prices paid for crude oil at the well in principal fields will be found on page 48 of The OIL WEEKLY, March 1. Hereafter this schedule will appear only in the first issue of each month except when changes are announced.

PLAN ECTOR PLANTS

Fort Worth.—Landreth Production Corporation, Fort Worth, proposes to erect a large well-pressure type absorption gasoline plant in the northwest extension of the Goldsmith field, Ector County, Texas, where the company is entering into an active drilling program. Preliminary survey of the casinghead gas supply has been completed by engineers, according to E. A. Landreth, president, and final decision on the project will be made early this month. Gulf Oil Corporation and Phillips Petroleum Company, owners of all the producing acreage in the southeast portion of the field, are reported to be contemplating the erection of plants to handle gas from their respective properties.

WORK ON LINE

Bartlesville. — Standish Pipe Line Company is reconditioning a portion of its system between Thrall, Kansas, and Kansas City, Kansas, to provide a full 8-inch line. Additional pumping equipment is being installed to increase capacity of this section of the line to 20,000 barrels daily. The expansion is necessary due to expansion of sales and increased crude oil requirements of the Kansas City refinery, which is being supplied from both western Kansas and Oklahoma.

Summary of Wells Completed in the United States Week Ending March 6, 1937

	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total Completions, 1937	Total Completions this Date 1936
Alabama	....	....	....	....	.....	1	....
Arkansas	1	1	....	....	300	10	17
California	11	10	....	1	3,340	181	154
Colorado	1	1	....	....	2,400	3	....
Florida	....	....	....	....	.....	....	....
Illinois	....	....	....	....	.....	5	4
Indiana	6	2	2	2	38	32	34
Kansas	29	23	2	4	24,383	360	227
Kentucky	....	....	....	....	.....	40	21
Louisiana	21	9	1	11	4,024	120	158
Michigan	9	6	....	3	4,465	140	127
Mississippi	....	....	....	....	.....	5	1
Montana	....	....	....	....	.....	16	17
Nebraska	....	....	....	....	.....	....	....
New Mexico	18	16	2	....	29,081	121	79
New York	....	....	....	....	.....	....	....
Ohio	56	13	26	17	390	310	397
Oklahoma	51	34	3	14	26,513	510	454
Pennsylvania	10	1	6	3	10	17	....
Texas	280	197	12	71	246,999	2,422	1,944
Utah	....	....	....	....	.....	....	....
West Virginia	23	3	17	3	36	149	118
Wyoming	3	1	....	2	2	18	6
Total this week	519	317	71	131	341,981	4,461	3,758
Total last week	467	324	30	113	426,571	....	....
Total this year	4,461	2,940	448	1,073	3,781,896	....	....

Comparison of Permits Granted for New Wells

STATE	Week Ending Mar. 6	Total this Mo.	Total this Year	Total this Date Last Year	1936 Year Total
Arkansas	3	3	15	14	103
California	19	19	281	107	1,054
Louisiana	20	20	160	169	1,107
Kansas	30	30	288	238	1,873
Michigan	14	14	151	95	762
Oklahoma	49	49	392	376	2,594
Texas	481	481	2,870	1,858	15,582
Total	616	616	4,157	2,807	23,075

Again a Peak

UNITED STATES OUTPUT IS 3,312,075 BARRELS DAILY

UNITED STATES crude oil production, which has been steadily increasing nearly every week this year, set another new all-time record during the past week, ended March 6, averaging 3,312,075 barrels daily.

That average was 15,975 barrels a day higher than the previous week's record output of 3,296,100 barrels daily as reported by the American Petroleum Institute. It was 153,075 barrels a day more than the recommendation of the United States Bureau of Mines.

All But Oklahoma

The further expansion of crude production last week was caused by increases in all the six leading producing states except Oklahoma, although the most important increase was that of nearly 40,000 barrels a day in Texas, under higher state allowables that became effective March 1. Texas last week averaged 1,370,100 barrels daily. Although that output was in line with the state allowables, it was 113,500 barrels a day above the Bureau of Mines recommendation for Texas production in March.

Kansas production last week averaged 187,350 barrels daily, which was several thousand barrels a day more than in the previous week and 9350 barrels a day more than the Bureau of Mines recommendation.

California last week averaged 585,000 barrels daily, which was 3000 barrels a day more than in the previous week and 14,100 barrels a day more than the bureau allocation.

Louisiana production was up 4050 barrels to 245,800 barrels daily, and was 5800 barrels a day above the federal government allocation.

New Mexico last week averaged 97,500 barrels daily, which was 100 barrels a day more than in the preceding week and 9300 barrels a day more than the Bureau of Mines recommendation.

Oklahoma output last week was down 24,875 barrels daily, having averaged 578,125 barrels a day, or 12,575 barrels a day less than the Bureau of Mines estimate of demand.

KILL TAX BILL

Oklahoma City.—Coincident with the increase of the gross production tax in Texas, the Oklahoma House of Representatives March 3 rejected a bill to double an Oklahoma tax, now 5 percent. It was the second time such an effort has been blocked in this session and is being interpreted as a legislative decision to let the current tax alone. Opposition to an increase of the Oklahoma gross production tax has been maintained on the proposition that oil development in Oklahoma has been suffering on account of high tax rates.

Allied with this opposition is another program of reducing the Oklahoma personal income tax rates. Office holders have been looking at tax returns and learning that some citizens whose incomes are large have found it desirable to establish residence elsewhere. Texas has drawn some of these. Most of them have loaded furniture into vans and set up house keeping elsewhere.

Another method of escaping the Oklahoma income tax is that of moving no furniture, but establishing legal residence in another state by the process of maintaining a household outside the state and voting there. Several Oklahoma oil executives are apartment tenants in New York.

United States Crude Oil Production

Estimates Compiled by The OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Recommendation (Daily in Mar.)	ACTUAL PRODUCTION: BARRELS DAILY FOR WEEK ENDING	
		March 6	February 27
TEXAS—			
Texas Panhandle	.....	73,800	73,800
North Texas	.....	67,500	66,900
West Central Texas	.....	32,100	32,700
West Texas	.....	199,600	189,700
East Central Texas	.....	115,400	107,400
East Texas Field	.....	452,900	452,000
South Texas	.....	225,300	216,200
Texas Gulf Coast	.....	203,500	191,800
Total Texas	**1,256,600**	**1,370,100**	**1,330,500**
OKLAHOMA—			
Oklahoma City	.....	131,875	149,050
Seminole Area	.....	132,025	133,675
Crescent	.....	12,700	9,500
Lucien	.....	13,025	12,950
Fitts	.....	76,125	90,175
Edmund	.....	15,625	15,975
Moore	.....	9,625	9,300
Others	.....	187,125	191,375
Total Oklahoma	**590,700**	**578,125**	**603,000**
KANSAS—			
Ritz-Canton	.....	5,675	5,700
Chase	.....	11,275	9,950
Hollow-Nikkel	.....	3,575	3,600
Sedgwick	.....	4,600	4,700
Burrton	.....	15,875	16,075
Lorraine	.....	6,850	6,800
Russell County	.....	28,450	24,900
Silica	.....	16,025	17,450
Others	.....	95,025	91,450
Total Kansas	**178,000**	**187,350**	**180,625**
LOUISIANA—			
North Louisiana	.....	72,300	70,350
South Louisiana	.....	173,500	171,400
Total Louisiana	**240,000**	**245,800**	**241,750**
ARKANSAS	**28,500**	**26,300**	**26,250**
CALIFORNIA—			
Long Beach	.....	61,500	61,500
Santa Fe Springs	.....	43,500	42,500
Huntington Beach	.....	37,000	39,000
Dominguez	.....	23,500	24,000
Inglewood	.....	12,000	14,500
Ventura Avenue	.....	34,000	33,500
Seal Beach	.....	8,000	9,000
Midway-Sunset	.....	67,000	64,000
Elwood	.....	9,000	9,500
Kettleman Hills	.....	76,000	79,000
Mountain View	.....	21,000	20,500
Playa del Rey	.....	10,000	10,500
Others	.....	182,500	174,500
Total California	**570,900**	**585,000**	**582,000**
MOUNTAIN STATES—			
Wyoming	42,200	52,200	51,800
Montana	14,600	15,500	15,300
Colorado	4,300	4,500	4,000
Total Rocky Mountain States	**61,100**	**72,200**	**71,100**
NEW MEXICO	**88,200**	**97,500**	**97,400**
EASTERN STATES	**114,700**	**116,900**	**115,200**
MICHIGAN	**30,300**	**32,800**	**29,900**
Total United States	**3,159,000**	**3,312,075**	**3,277,725**

Edited by
WM. V. GROSS, Associate Editor

Firms Jeopardized

MEXICO'S NATIONALIZATION HARD ON PRIVATE CONCERNS

MANY million dollars invested in the oil inustry in Mexico by foreign operators are jeopardized by a new projected law providing for organization of a government owned, integrated oil company to take the place of Petroleos de Mexico, S. A., (Petromex).

Stockholders of Petromex, which was supposed to have been owned 50 percent by the people of Mexico and 50 percent by the government, ratified March 2 the proposal of their directors to liquidate the assets of the corporation and to endorse the legislation authorizing formation of Corporacion Nacional Mexicana de Petroleo, a wholly government owned corporation, which is scheduled to start operations equipped with all assets previously held by Petromex.

Clinches Domestic Market

The immediate result of this action would seem to be inability of private enterprise to compete with the government owned company in that part of the domestic market which can be supplied with products refined from crude produced by the government company. It is estimated it would take from three to five years, however, for the new corporation to build up sufficient crude production on the acreage now held by Petromex to take care of Mexico's current domestic needs.

There has been considerable speculation as to the effect of the present legislative and government trend on private enterprise in Mexico.

"Do you anticipate confiscation of producing properties or potentially productive properties by the government?" one executive was asked.

His answer was, "When a thing has happened fifteen times, you rather expect it to happen again. The trend, at least, certainly is definite."

No More Concessions

The draft of the proposed law provides that Corporacion Nacional Mexicana de Petroleo shall handle all the government oil business, which includes collection of royalties and rentals from foreign companies operating there. It provides also for exclusion of private enterprise from any new oil lands or concessions, and goes further by stipulating that leases now held on oil lands by foreign corporations must at expiration be turned over to the new corporation and to no one else. Several leases that were important contributors to Mexico's production of 40 million barrels in 1936 are nearly expired, it is said. Most of the leases in Mexico were taken for 20 years. Mexico's peak year was 1921, when 193 million barrels were produced, and many of the currently effective leases were taken before that peak was reached.

No Chance To Block It

The chance of blocking the new law by educating Mexican congressmen on its probable dire effects is remote, due to the fact that it can become a statute merely by executive order. President Cardenas, it will be remembered, was given extraordinary power during the holiday season to deal with petroleum matters during 1937. The cause of that move on the part of the Mexican congress was at the time attributed to the need for arbitrary power in connection with settlement of labor difficulties. It will be Cardenas, incidentally, who appoints the managing board of the new corporation.

If the executive order is given making the official draft a law, legal difficulties are anticipated. Certain Mexican citizens and oil company lawyers state terms of the proposed law are in direct contradiction to Mexico's Constitution of 1917.

Litigation Outcome Uncertain

The claim is made that with the wave of nationalization and socialization of resource sweeping Mexico as it is today it is difficult to anticipate the outcome of a lawsuit, regardless of the array of facts or legally acceptable testimony and evidence one may have on his side.

"The law as written is one thing. What a judge may interpret as the need of the people may not necessarily reflect the law as written. Quite a few lawyers in Mexico will tell you that such has been the case there repeatedly during the past year," were the observations of one executive.

"The irony of the thing," said another, "is that assets of the new corporation eventually will consist substantially of confiscated assets previously held by private enterprise and that those same assets will be used as collateral, in a manner of speaking, to borrow money from private enterprise." He referred to the reported plan of the government to borrow $15,000,000 from financial houses in the United States to buy railroad equipment and to use income from Corporacion Nacional Mexicana de Petroleo as a guarantee of payment.

Regarding the probability of crippling private oil industry interests more than they have been in the past, attention has been called to one of the prime purposes for which the new company will be set up: "To bring about a better and more equitable distribution and conservation of the public wealth." This, some claim, may mean continued cancellation of concessions on a larger scale. Figures giving total acreage of concessions added to federal reserves in 1936 by Cardenas appeared in a recent issue of the Oil Weekly. Moreover, the draft would give to the new corporation right to "acquire by purchase, lease or construction, or by any other title, the ownership or use of pipe lines, tanks, terminals, refineries, ships and installations of any kind to carry out the exploration or industrial or commercial exploitation of petroleum or any of its derivatives."

Power May Ruin It

Another man interviewed regarding the ultimate success or failure of the new corporation said that its powers were so broad they might eventually be the cause of bankruptcy. He referred to that part of the draft which would give the organization right to play the market so far as other oil stocks were concerned, and the right to make loans, whether guaranteed or not, and to issue all kinds of promissory bonds, notes and obligations.

Standard Oil Company of California, Standard Oil Company of New Jersey, Royal Dutch Shell Combine, Sinclair, Cities Service Company, Gulf Oil Corporation, and Pan American Petroleum Company are among the foreign companies operating through subsidiaries or affiliated companies in Mexico.

Production of crude oil in Mexico during 1936 showed a slight increase, due primarily to Poza Rica field, where the government holds considerable acreage—about one third of it. If it had not been for Poza Rica, which has a proven area estimated at eight square miles, the nation would have shown a considerable decline, due to so much loss of time and production through strikes and other labor difficulties.

V. R. Garfias and R. V. Whetsel of Cities Service Company, New York, have predicted an increase of 10 percent for Mexico during 1937, barring strikes and other difficulties.

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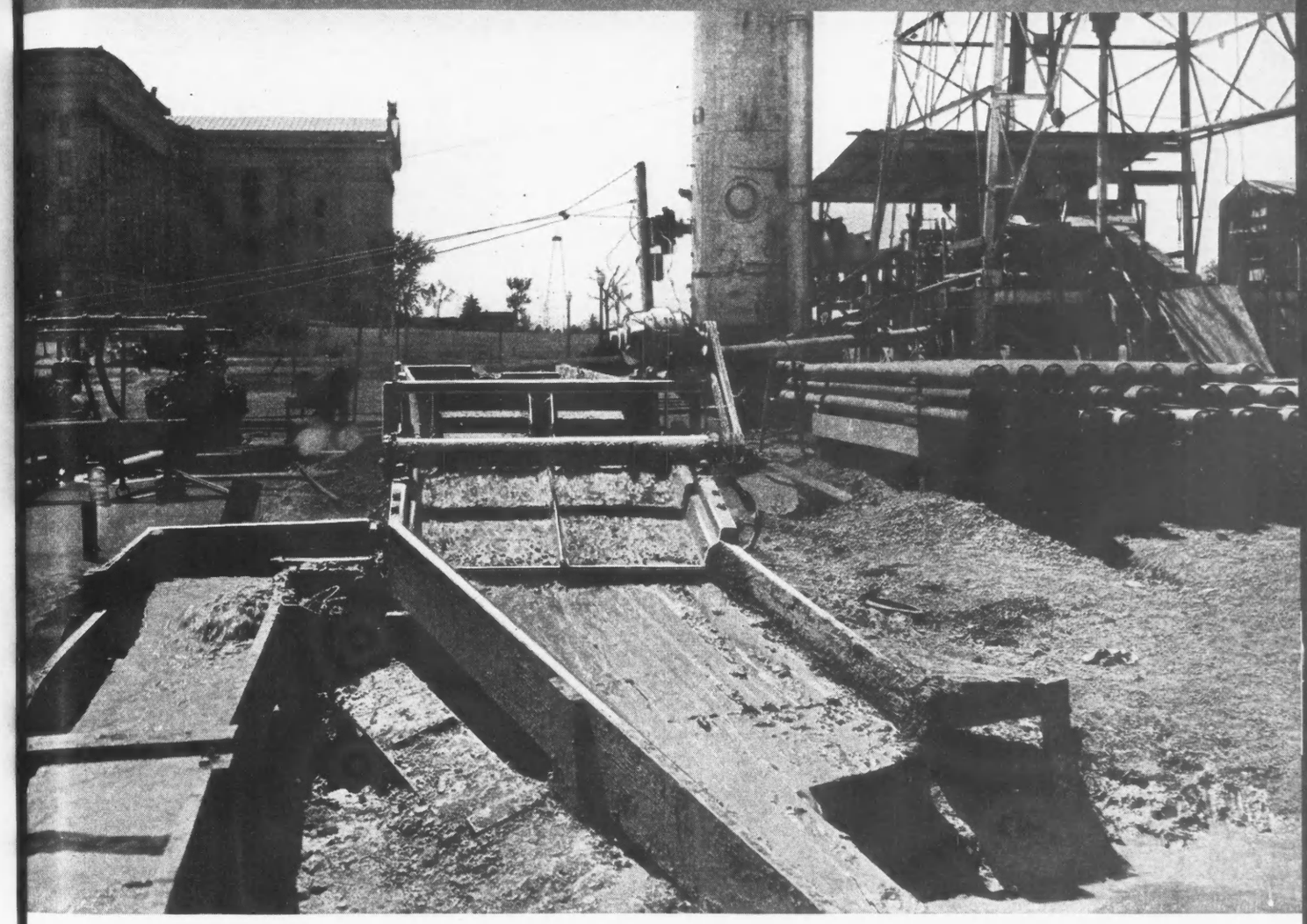

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Slated for Boom

PLAN MANY TESTS IN TURNER VALLEY; GOVERNMENT HELPS

An oil development program along lines only the most optimistic observers dared dream of two months ago is now assured for the Turner Valley oil field of Alberta, Canada, during the spring and summer months following an important completion recorded in February and governmental assurances that no legislative bars would be raised to hinder development.

Completion of Brown Oil Corporation's B. & B. well for 1800 barrels daily, equal to the combined production of five other important producing properties in the valley, stimulated lease activity and caused operators to expand and speed up their drilling plans.

Government Assurance

Hon. N. E. Tanner, minister of lands and mines, declared February 26 he expected little legislation affecting the oil industry would be introduced during the current session of the legislature. That which might receive consideration would not be of a nature that would retard development, he indicated.

Coincident with the convening of the legislature came announcement of a 50 percent reduction, from 10 to 5 percent, in royalties payable to the provincial government on products obtained through absorption plants in Alberta. The reduction, government officials announced, is designed to stimulate production.

Drilling Equipment Exempt From Duty

Further encouraging news to oil men here was announcement February 25 that well drilling equipment, seamless iron and steel tubing and other well equipment not manufactured in Canada would be admitted free under a new trade agreement approved that day. Formerly, this equipment was subjected to a 17½ percent tariff when coming from the United States, and 15 percent when coming from the United Kingdom.

Twenty carloads of equipment, including 3 new rotary drilling outfits, were reported on their way for use in the development program of Brown Oil Corporation. Cellars were being dug and cement foundations laid for two of the wells, one on Okalta acreage in legal Subdivision 8 of Section 20, west of the Foundation well, and the other on legal Subdivision 14 of Section 16, south of the Westside well, also on Okalta acreage.

50 Tests on Okalta's Program

The third outfit will be used on legal Subdivision 15 of Section 19, on acreage held by the Advance and C. & E. Corporation. Advance is to receive 6 percent royalty on production, and the C. & E. Corporation 12½ percent.

Brown Oil Company, financed by Toronto interests, brought in the first crude producer in the area, Turner Valley Royalties, and the large B. & B. well.

Okalta Oils Limited has anounced the largest drilling program for the summer thus far. It is to embrace from 30 to 50 wells. Okalta will drill a well on each of 15 sub-leases, covering 80 acres each. Each lessee, in order to retain 40 acres of each lease, is obligated to start a second well within three months of the completion of the first well. According to W. S. Herron, Okalta Oils president, the ultimate drilling program will embrace at least 50 wells.

Similar plans are being made by officials of other companies operating in the Valley, it is reported.

Further indication of the widespread interest in Alberta fields comes from Edmonton. Over 100 applications for authorization of new companies are awaiting action by the Board of Public Utilities Commission, which has jurisdiction over these matters.

Watch West Flank Tests

Turner Valley interest last week was centered on two wells of Brown Oil Corporation on the west flank. The Westside well, southeast of the Foundation, a 400-barrel producer, was drilling at 6313 feet, 373 feet in the lime. The Newfold well, northeast of Foundation, was at 6073 feet, 263 feet in the lime. Both wells are expected to hit the black lime at between 425 and 430 feet in the limestone.

Production of Turner Valley wells is about 3500 barrels of crude and 1500 barrels of naphtha daily. Present refining capacity available to the area is about 16,000 barrels, divided as follows: Imperial Oil Company's plant at Calgary, 5000 barrels, with a cracking capacity, using the Dubbs process, of 3500 barrels; Coutts refinery, 2500 barrels; B. A. Oil Company's plant at Moose Jaw, 4500 barrels, and Imperial's plant at Regina, 3000 to 4000 barrels. One refinery, now closed down, can be brought back into play at comparatively small expense, and the capacity of others can be increased.

Five Absorption Plants

There are five absorption plants in the Valley, extracting high gravity oil from natural gas at the average recovery rate of .25 to .30 gallons per 1000 cubic feet of gas. From 250 to 275 million cubic feet are being put through daily. Royalite Oil Company's two plants each handle from 40 to 60 million cubic feet; British American Oil Company's new plant at the south end of the Valley, 60 million feet; the Mayland plant, about 40 million cubic feet, and the small Fay Becker plant, about 50 million cubic feet.

Pipe Lines Being Considered

Some operators believe this summer's extensive drilling program will bring in wells with total barrelage over refining capacity. Possibilities of extensive pipe line construction programs to move the crude to ports at the head of the Great Lakes and at tidewater on the Pacific Coast are already being investigated by oil men here. The distance to Winnipeg is about 800 miles, and to Vancouver about 1000 miles. It is likely that the first pipe line, however, will be constructed to Moose Jaw, 425 miles.

Pipe line construction is also dependent upon the railroads. Whether they will offer freight rates low enough to enable Canadian crude to compete with that from the United States and South American fields in a large part of the Dominion is yet unknown.

Possibility of oil exploration on the 3840-acre ranch of the Duke of Windsor, adjacent to the Turner Valley field, was waived for a period of at least 10 years by an order-in-council signed February 26 providing that mineral rights would not be sold by the province for 10 years after disposal of the ranch by the former king.

Up for sale under the direction of an English bank, the ranch is expected to bring approximately $100,000. When the Duke of Windsor first bought the ranch in 1919, he was given a 99-year lease on the oil and mineral rights with the stipulation it could not be transferred. It was granted as an inducement to the pure livestock industry in that region.

The order-in-council will replace the 99-year mineral lease on sale of the ranch.

HIGHEST SINCE '27

Mexico's January output totals 6,120,635 barrels

Petroleum production in Mexico got off to a record breaking start in 1937 with an output estimated at 6,120,635 barrels in January by the ministry of national economy. This is the highest monthly production in many years and is a continuance of the upward output swing that began in December. The ministry fixes production for that month at 4,259,733 barrels.

Not since 1927 has production in any month approached that of January. During many recent years, the monthly output averaged about 3,250,000 barrels. The ministry attributes the sudden upward spurt to greater activity in old zones and a large number of good producing wells in new areas. Production in January, 1936, was but 3,377,591 barrels.

MEXICO

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Mex. Eagle Oil, El Plan 57, El Plan, Vera Cruz state	2798	2810
Amer. Int. Fuel, Altamira 101, Altamira, Tamaulipas	126	1715
Globe Pet. Co., Globe 15, Tampico Alto, Vera Cruz	145	3100
New England Fuel Oil, Pazzi 37, Panuco, Vera Cruz	158	1760
Petromex, Petromex 13	*	2036

*Failures; †Junked; Million cu. ft. gas.

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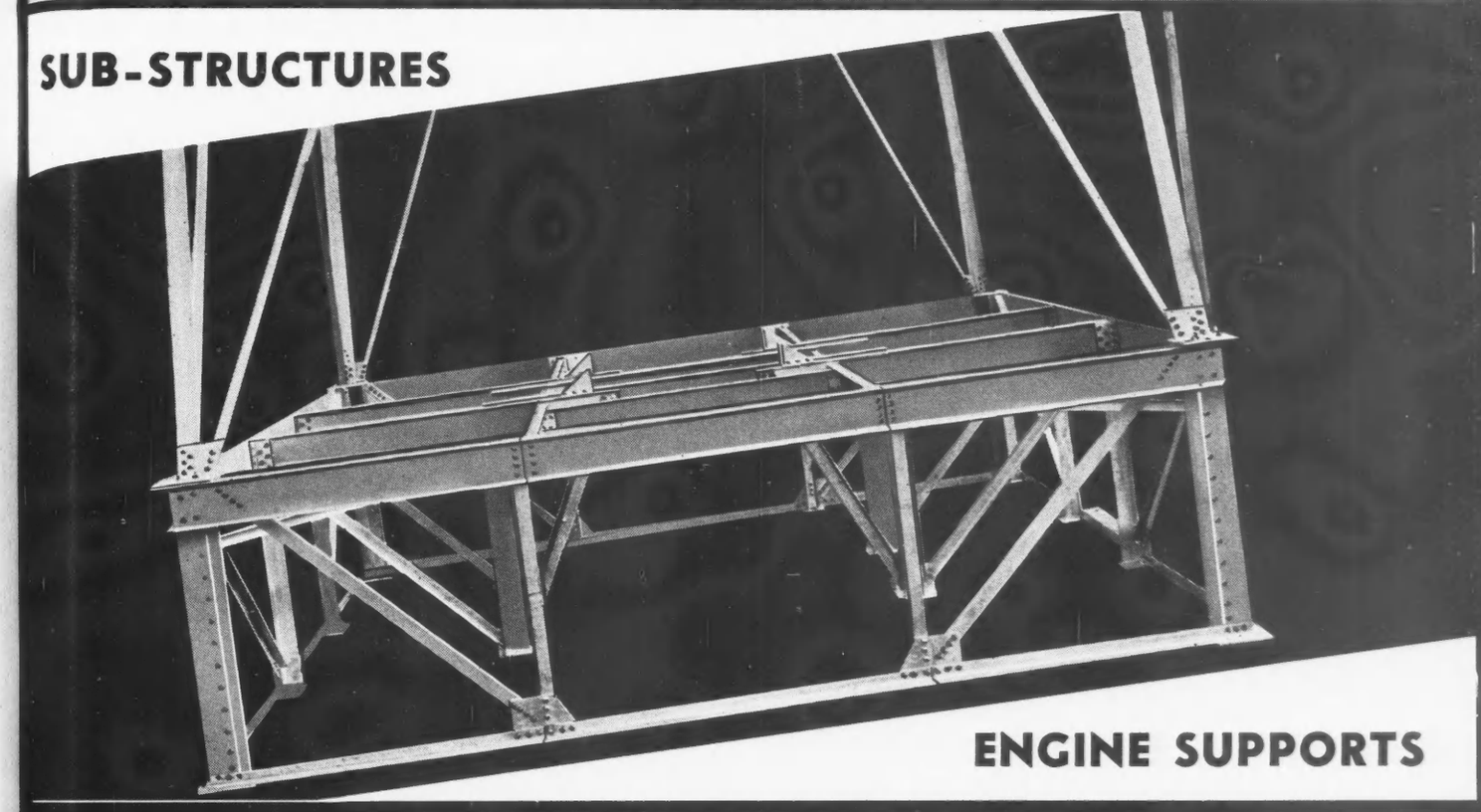
SUB-STRUCTURES



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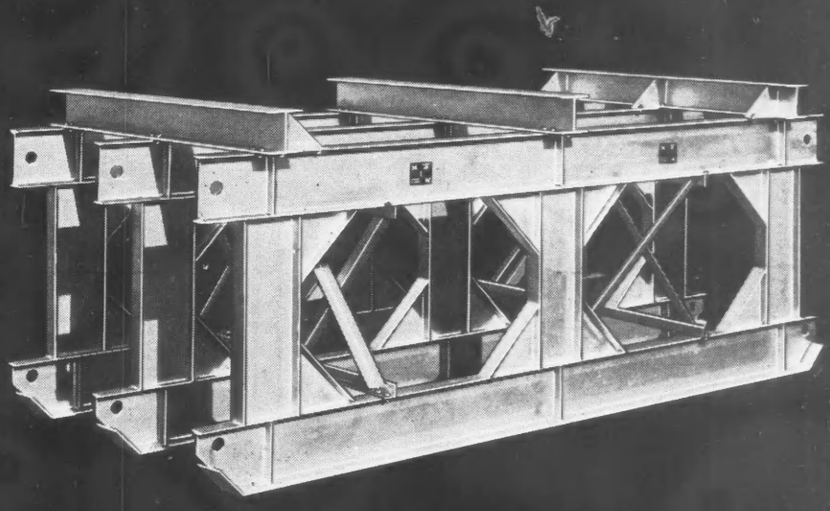

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MAKE PLANS

For Gas Measurement 1937 Short Course

NORMAN, OKLA.

THE general committee, of which E. E. Stovall is general chairman, of the Southwestern Gas Measurement Short Course has formulated plans for the 1937 school. The dates of April 20, 21 and 22 have been selected. Gilbert Estill, Oklahoma Natural Gas Company, Tulsa, has been appointed chairman of the program committee. W. H. Carson, University of Oklahoma, has been named chairman of the banquet and local arrangements committee. Max Watson, Canadian River Gas Company, Amarillo, Texas, was appointed chairman of the exhibits committee. G. W. McCullough, Phillips Petroleum Company, Bartlesville, Oklahoma, will be chairman of the publications committee. Miss Kate Niblack, Oklahoma Utilities Association, Oklahoma City, was appointed chairman of registration and publicity committee, and L. G. Rheinberger was appointed chairman of the practical methods committee.

At the recent meeting of the general committee Miss Kate Niblack was elected as permanent member of the committee representing the Oklahoma Utilities Association.

Other general committee members are: E. M. Myers, Corporation Commission, Oklahoma City; A. E. Higgins, Secretary of Natural Gas Department, American Gas Association, Dallas; William F. Lowe, secretary, Natural Gasoline Association of America, Tulsa; J. H. Satterwhite, American Meter Company, Tulsa; W. R. McLaughlin, Pittsburgh Equitable Meter Company, Dallas; G. B. Lane, Foxboro Company, Dallas; George P. Bunn, Phillips Petroleum Company, Bartlesville; Earl Kightlinger, Arkansas-Louisiana Gas Company, Shreveport; R. D. Hanley, Magnolia Petroleum Company, Dallas; Fay C. Walters, Panhandle Eastern Pipe Line Company, Kansas City; C. A. Breitung, vice president, Southwest Gas Utilities Corporation, Ada, Oklahoma; Ray Rountree, United Gas Public Service Company, Houston.

The committee unanimously approved a proposal to present each ex-officio member of the committee who has served as General Chairman with a rosewood gavel which will be fitted into a walnut box with maple inlaid top. Attached to the gavel will be a sterling silver plate with the man's name, year in which he served as chairman, and Gas Measurement Short Course inscribed thereon.

The next meeting of the committee will be held in Tulsa during the Oklahoma Utilities Association annual meeting, March 22.

Discuss Situation

[*Continued from page 4*]

Texas business men and state officials should work with leaders of the oil industry for conservation of natural resources and for development of this industry which has contributed so much to the state, Terrell told the gathering.

"At present oil is being produced at the yearly rate of about $400 per family in this state. From oil and gas on school lands the state school fund the past fiscal year received $27,000,000.

"Geological records show that not more than 26 percent of the oil in the old Burkburnett field was recovered because of the personal desire to get the cream of production at low operating costs," Terrell said. "With present proration laws, it is estimated that the recovery of the East Texas field will be close to 90 percent. In some cases the bottom-hole pressure has dropped only two pounds.

"Presumably there are 276,000,000 barrels of crude in storage," Colonel Thompson said, "but a large part of this will have to be handled with a spade and has no gasoline content. Many refineries refuse to use the storage oil as it gums up the stills."

"During 1936," he continued, "we fell short by 58,998,000 barrels of oil in meeting the crude production demand for the year."

Andrew Howsley, former state legislator, from Albany, told members of the association that the greatest tax threat in the history of Texas was facing the oil man.

He told them of appropriation bills totaling more than $115,000,000 reported out by the House, that State legislators had turned to the oil business to supply the revenue with which to meet the increase.

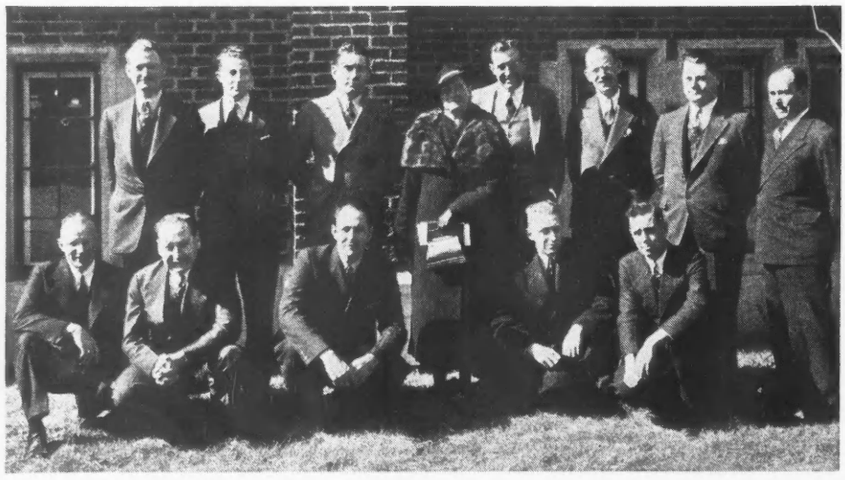
He said that not only was the 10 percent tax bill before the house but another tax threatened to be pushed on the industry, a bill calling for a so-called franchise tax, 5 percent of the net income. In case a corporation did not report an income for any one year, the levy would be satisfied with only one-tenth of one percent of the gross assets of the company.

R. A. King, president of the organization for the past year introduced new officers of the association: R. L. Underwood, the president, N. H. Martin, first vice president and P. F. Gwynn second vice president.

Directors present were: O. T. Anderson, M. W. Blair, C. J. Bohner, D. H. Bolin, C. W. Boller, J. H. S. Bonner, J. S. Bridwell, O. Bullington, C. W. Cahoon, Jr., C. B. Christie, C. W. Clark, R. G. Cocanower, L. H. Cullum, A. R. Dillard, P. B. Flynn, P. F. Gwynn, Dave G. Gray, W. B. Hamilton, Harvey Harris, Harry Hines, Tom F. Hunter, Roy B. Jones, Harry White, John E. Kilgore, George Kimbell, R. A. King, Homer Lee, Phil Lesh, N. H. Martin, W. E. Maxon, Jr., J. A. McCarty, Luke McCrory, C. P. McGaha, J. F. O'Donohow, T. H. Perry, J. J. Perkins, Dr. E. R. Riggs, E. J. Ruwaldt, Fred Sehmann, Adam Seitz, T. O. Shappell, John W. Thomas, C. J. Tucker, R. L. Underwood and Luther Webb.

Plan Gas Course

The general committee of the Southwestern Gas Measurement Short Course recently met to formulate plans for the 1937 school. Those present included the following: Standing, left to right—Max Watson, L. G. Rheinberger, Earl Knightlinger, Kate A. Niblack, G. B. Lane, J. H. Satterwhite, G. W. McCullough, A. E. Higgins; Front row—W. H. Carson, W. R. McLaughlin, E. E. Stovall, Gilbert Estill and F. C. Walters.



Fred K. Haskell

[*Continued from page 18*]

lish his home as well as his business in the Texas city.

Haskell was born June 28, 1882, at Bradford, Pennsylvania. He graduated from Princeton University with the degree of civil engineer. His first job in the oil industry was as a pumper on an oil lease in Grant County, Indiana. After working for Red Bank Oil Company and J. C. Donnell, agent, at Robinson, Illinois, he went to Bartlesville, Oklahoma, to become associated with Quapaw Gas Company. Then followed some service with Moncton Tramways Electricity & Gas Company, Ltd., at Moncton, New Brunswick, Canada, after which he was with Homer Preston oil interests in Tulsa. His first position with the Empire Companies was in the scouting department of Empire Gas & Fuel Company, which was followed by work in the crude oil purchasing department of Empire Oil & Refining Company before he became manager of Empire Pipe Line Company.

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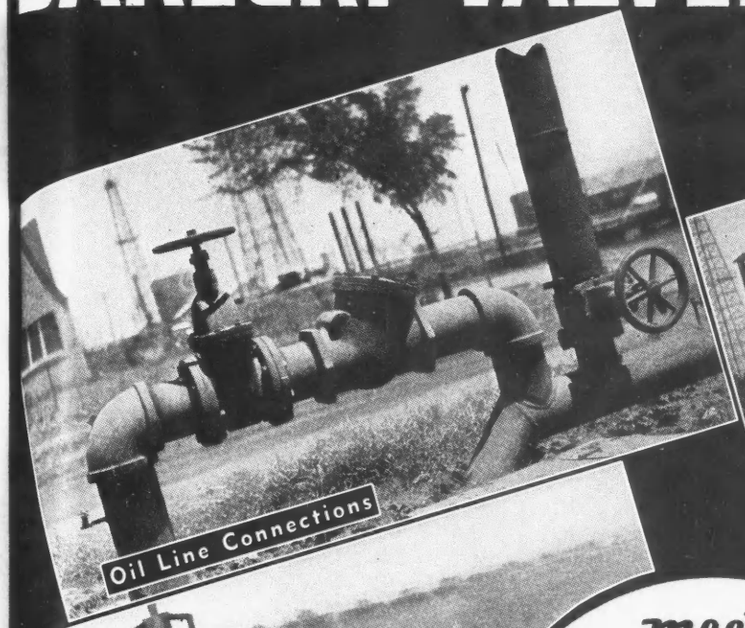

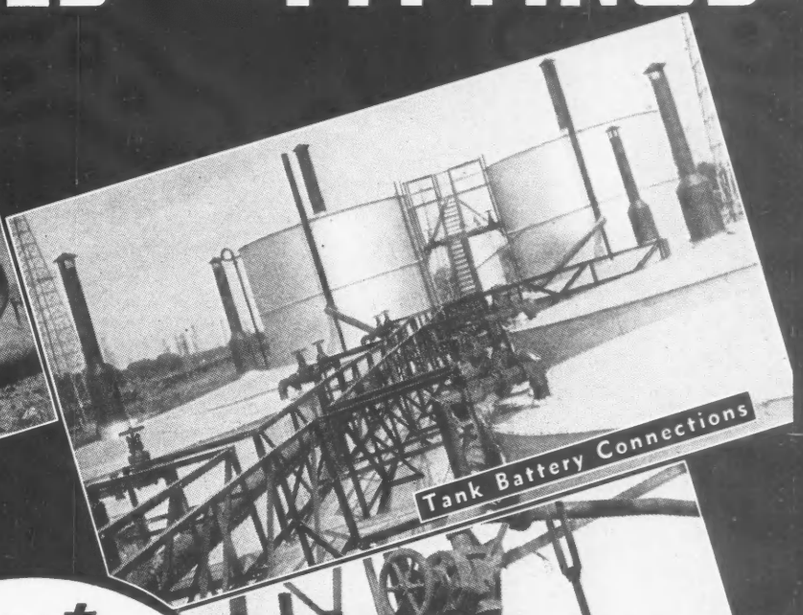

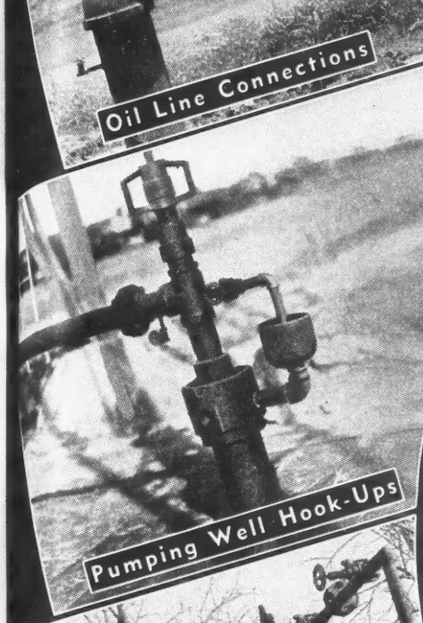

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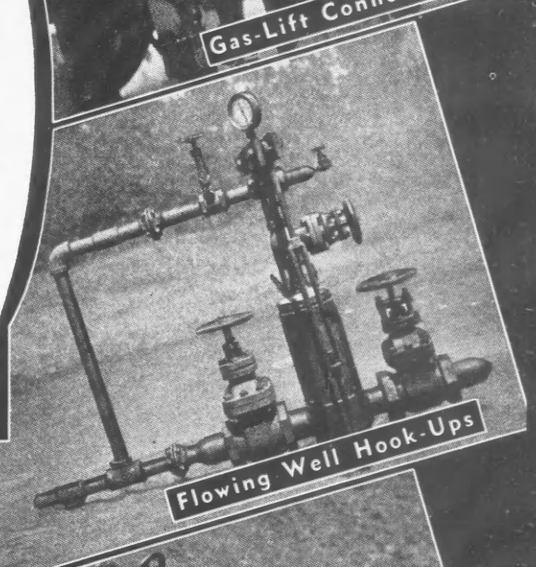

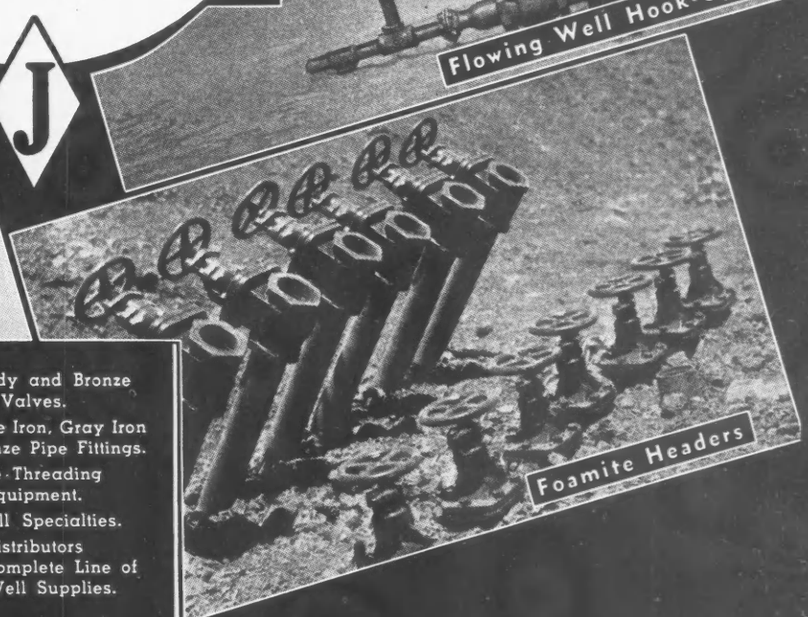

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Deepen Outpost

TEST SOUTH OF FAULT AT FITTS IS DRILLING AHEAD

WEEKLY STAFF REPORT

Tulsa.—The well that has been claiming the lion's share of attention of Mid-Continent operators during the past few weeks, E. H. Moore, Incorporated's, Muse 1, SW NE SE 33-2n-7e, south of the fault line defining Fitts pool of Pontotoc County, Oklahoma, drilled on through the Hunton lime stratum without a complete test having been made. The hole was stopped in the lime and fluid was circulated.

However, it was decided that acidization was necessary to start possible production, and the hole was carried on down. Viola formation was topped at 4310 feet.

Late in the week operators had set seven-inch casing on this formation and were waiting on cement to set. Drilling was to be continued as soon as possible.

Airport Field Active

Tulsa County's airport field, just outside the city limits, continues to add completions to its list of Bartlesville producers. The largest well to date was completed during the week for about 100 barrels per day. Production is from the Bartlesville sand, found at near the 1,000-foot mark. The last completion, Crater's Norman 1, CSE NW 35-20n-13e, topped the sand at 1069 feet and drilled to 1084 in the more prolific zone.

Crude from this new shallow pool is 40 to 41 gravity. Seven wells are now being drilled and nine have been completed. There have been no failures listed for the field. Leasing has been heavy in the sector, but most of the acreage was obtained before the present development.

Pipe Line Outlet Planned

Sinclair Prairie Oil Company will construct a three-inch line to take oil from this field. Lease storage has not been sufficient to take care of daily production.

An Ordovician test to be spudded not later than this month on Kinta anticline of Haskell and Pittsburg Counties, Southeast Oklahoma, is the most important wildcat location announcement made so far during 1937. Continental Oil Company, in conjunction with Oklahoma Natural Gas Company and Central States Power & Light Corporation as prior lease holders, has obtained leases covering about 9,000 acres, the well being started to fulfill an agreement reported early last summer.

Geologically, the area has been of sustained interest for a number of years past, particularly so since the opening of Fitts pool in 1933. Gas production is general from the area, and is being used to supply pipe line systems.

The trend of the surface indications show a long anticline, northeast and southwest. It is believed that subsurface geology may closely follow that prevalent in Fitts pool to the southwest. So far, no oil is produced in the vicinity, and no deep tests have been drilled that could be used as markers in the contemplated well.

Must Go to 7000 Feet

From surveys made by Continental Oil Company during the last year, it is believed that the depth necessary will be 7,000 feet or greater.

Location for the test, Alice Anderson 1, SW SE NE 33-8n-20e, just east of Kinta, is near the northeastern extremity of gas production. The major area of the anticline is to the south and west of the location.

Bebee pool of Pontotoc County has been extended to the south and east by Senora Oil Company's Burk 1, CNW SW NE 33-5n-5e, which found oil in the Viola above 2498 feet. The crew will clean out after a shot for testing.

Fitts Is Quiet

Fitts field remained quiet during the week, the only interest being created by J. Paul Getty, Incorporated, and

Allowable Is Set

OKLAHOMA MAY PRODUCE 620,460 BARRELS PER DAY

Oklahoma City.—After looking at demand of 665,264 barrels daily as indicated by what purchasers wanted from fields of the state and at the 590,700 barrels recommended as adequate by the United States Bureau of Mines, the Oklahoma Corporation Commission set 620,460 barrels as the allowable during March.

The Oklahoma City Wilcox zone wells were raised from 122,084 barrels to 132,000 barrels. Class C pools were raised from 123,970 barrels daily for February to 164,500 barrels in March.

The increase for Class D pools was from 8,400 to 9,100 barrels daily. The decrease for the settled producing fields was from 152,586 to 140,000 barrels daily.

Class C Gets Most Increase

Most of the increase of 38,560 barrels above the recommendation of the Bureau of Mines was given to Class C pools, and the Fitts pool came in for a large share of this. Hunton lime wells at Fitts were raised to 24,000 barrels from 16,650. Upper Simpson wells in this field have a March daily allowable of 60,000 barrels against 53,948 for February. The Wilcox sand wells at Fitts were increased to 5000 barrels.

Edmund will have a March allowable of 22,000 barrels against 13,989 in February. The Moore pool was given 13,000 barrels daily in March over 4950 for February.

Three Not Restricted

The March proration order removed three more fields of the Greater Seminole area from restriction. Only two, Keokuk Falls and the North Olympic pool, are now under proration. Each was given a slight increase over February.

A new order was written for the Oklahoma City field. Provisions follow what was indicated at the hearing February 16. This provides that the minimum production for wells in the Wilcox zone shall be 250 barrels daily. Previously the minimum allowable had been 200 barrels. For the larger wells a graduated decline was adopted. A well of 200 barrels is reduced by 17.543 percent, giving it a potential of 165 barrels. The graduated decline is on 100 barrel units up to a top capacity of 18,000 barrels, which must take a percentage decline of 69.973 percent to give it a potential of 5404 barrels.

Three Hour Potentials

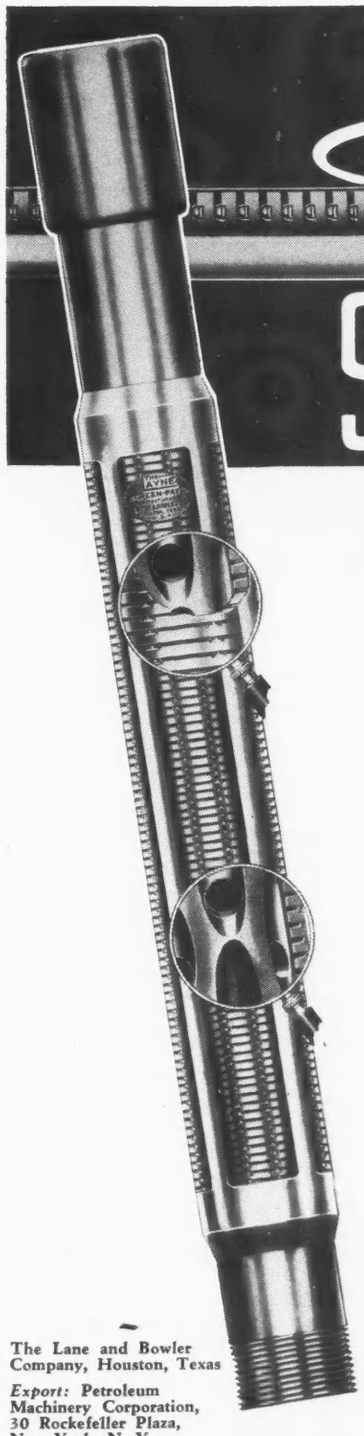
Producers, however, have the privilege of taking actual output to establish the potential of any well in case of dissatisfaction with the table of graduated declines. A potential taken under this provision must be for three hours and the capacity will be determined by multiplying the output of the last two hours by 12. Such a test will exist during the potential period whether the well shows an increase or a decrease in comparison with the graduated schedule.

This order also fixed the period for which these potentials shall exist from March 1 to June 30. Previously the period was for six months period, October 1 to March 31.

Smooth SURFACE

of WIRE WRAPPED SCREEN

assures less disturbance of sand



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THE AYNE WIRE WRAPPED SCREEN

Minnehoma Oil & Gas Company's Masters 2, NEC SW 23-2n-7e, which changed from a water well to an oil well, after plugging back from the bottom of hole.

This well had the top of the Hunton lime at 3714 feet and showed for water and little oil. It was believed to be a defining well on the east side of Fitts pool when the water was first reported. But subsequent findings have indicated that the well has extended production rather than limited it. The hole was carried to 3855 feet, where it was acidized with 3,000 gallons. From this depth the well flowed 360 barrels of oil in 12 hours and was reacidized with 7,000 gallons. One hour flow through casing following the second acid treatment was 472 barrels, plus an estimated 10,000,000 cubic feet of gas.

Completions in Fitts pool included Blackstock Oil Company's Moody 5-A, NE SW SW 23-2n-7e, completed in Hunton lime for a potential of 4024 barrels from 3885 feet. The same interest's Lewis 3, SW SE SE 19-2n-7e, was acidized with 10,000 gallons in the Viola lime at 4415 feet and obtained a potential of 1065 barrels. Skelly Oil Company's Metropolitan Life Company's 10, SE NW SW 23-2n-7e, received a potential of 4383 barrels from Hunton. Sinclair Prairie Oil Company's Wooley 16-B, NEC SW 33-2n-7e, made a potential of 3251 barrels from Hunton. Stanolind Oil & Gas Company's Harden 10, NW NW SW 30-2n-7e, made a potential of 2236 barrels from Hunton. J. E. Crosbie's Burris Smith 2-B, CW½ W½ SE 22-2n-7e, flowed 94 barrels from 3709 feet in one-half hour prior to taking a potential test. E. H. Moore, Incorporated's Simpson 5-A, NWc 28-2n-7e, received a potential of 2582 barrels from Hunton at 3472 feet.

Stanolind Oil & Gas Company and Amerada Petroleum Corporation's Pottawatomie County test at the north edge of the Shawnee pool, Rushing 2, SE SW SE 32-1n-4e, obtained oil color and odor in a core taken above 4407 feet in Earlsboro sand. Seven-inch casing was run preparatory to testing. North of this area in Lincoln County, Anderson Prichard Oil Company's Colon 1, CNL SE SW 28-17n-4e, near Agra, topped lime at 4289 feet and drilled 4333 feet. A core taken indicated oil, although no test has yet been made.

49 NEW STARTS

Tulsa.—First reports for the week closed, totaled 49, or ten below the figure set for the last previous week. Oklahoma activity was greatest in Okfuskee County, where eight locations were made. Seven locations were reported from Creek and Seminole counties and six from Pontotoc County. Three reports each were received from Osage and Hughes counties and two each from Lincoln, Oklahoma, Carter, Jefferson and Okmulgee counties. Cleveland, Garvin, Marshall, Pottawatomie and Tulsa counties had a single report each.

There were 51 completions in Oklahoma during the past week, 34 being producers with a total initial production of 26,513 barrels of crude. Three wells were completed as gassers for an open flow of 13,500,000 cubic feet. One location was abandoned and 13 starts were failures.

TO CAUSE DRILLING

Britton extension test involves townsite

Oklahoma City.—Extension of the Britton field three-fourths of a mile southeast by Frank Buttram's Zeilny 1, NW SE SE 20-13n-13w, is due to bring a drilling campaign into the Britton townsite. The well gives this Oklahoma County pool assurance of an increased producing area, and the fact that leases have been held for more than two years in many instances is the basis for expecting immediate drilling. Many of these leases are in the townsite area.

In the north extension of the Oklahoma City field the drilling campaign is being wound up. Some favorable drilling area is still without tests, but this is largely occupied by expensive homes and the bonus requirements are such that it is not likely producers will gamble this initial expense against the low output now being registered in completions. Reservoir pressure has reached such a low point that flowing wells establish low potentials.

Tapering off of Oklahoma City drilling leaves the Moore pool of Cleveland County as the leading area for big wells in this part of the state.

Laying Line to Well

The Zeilny well was completed for 5400 barrels in the Wilcox sand. Continental Oil Company is laying a line to the well.

In the north extension of the Oklahoma City field, Barnsdall Oil Company completed the last of its wells.

Edwards 5, near Northeast 36th street and Kelley Avenue, made 750 barrels potential on gas lift from 6451 feet in the Wilcox sand.

Its Guthrie 5, at 40th and Lincoln Parkway, responded with 570 barrels daily in the Dolomite, total depth 6,437 feet.

22 Tests Drilling

The north extension now has 22 active tests. Most of these are at depths which will allow completion during the month. Only two wells were started last week.

Two wells were completed last week in the Moore pool, Cleveland County. Sinclair-Prairie Oil Company's Rice 2, SE NE 28-10n-2w, tested 775 barrels of oil an hour along with 66,000,000 cubic feet of gas from 7,288 feet in the Wilcox sand. It produced three hours and was shut in under 1,600 pounds pressure.

The same company later added Peaches 2, NE NW 21-10n-2w, which was tested through tubing and made 1,900 barrels in 24 hours along with 3,250,000 cubic feet of gas from Wilcox sand, total depth 7,375 feet.

James 2 of Gulf Oil Comporation, SW NW SW 27-10n-2w, is ready to drill out plug. Its depth is 7,279 feet. Allen 1 of this company, NE SW SW 27-10n-2w, will be taken deeper after a bridge is removed from around 5,000 feet.

Anderson-Prichard Oil Corporation, State 2, NW SW SE 16-10n-2w, is drilling around 7,000 feet.

Crescent Well Completed

Another producer for the Crescent pool, Logan County, was added last week, Walker 4, owned by Carter Oil Company and Gulf Oil Corporation, NE NW NE 1-33-17n-4w, which was completed for 2,350 barrels in the second Wilcox sand at 6,280 feet. These companies are ready to drill in Walker 5, SW NW NE 33-17n-3w.

LEASING ACTIVE

Plan several deep tests in Southern Oklahoma

Ardmore.—Deep wildcat tests for the southern Oklahoma belt are being announced, and the dealing in leases indicates that further tests are to be started this year.

In Gavin County, Roy Burke is scheduled to take a test to 5000 feet in SW NW SW 23-1n-1e. Leases in this area have been pooled by several of the major companies and some individuals.

Plan Stephens County Test

Details are being worked out for a test in Stephens County NE NE NW 16-1s-4w. The drilling is to be done by Helmerich & Payne, Incorporated. The Texas Company, Sun Oil Company and Gulf Oil Corporation are among the holders of acreage around this proposed test.

Failure to get a satisfactory completion in Stockton 1, Love County test, is responsible for the decision of Sinclair Prairie Oil Company to stake location for Stockton 2 SE SE SW 26-6s-2w. Stockton 1 found oil at 6927 feet, where tubing is stuck. The tubing will be shot and removed from the hole.

Wildcat Shows Oil

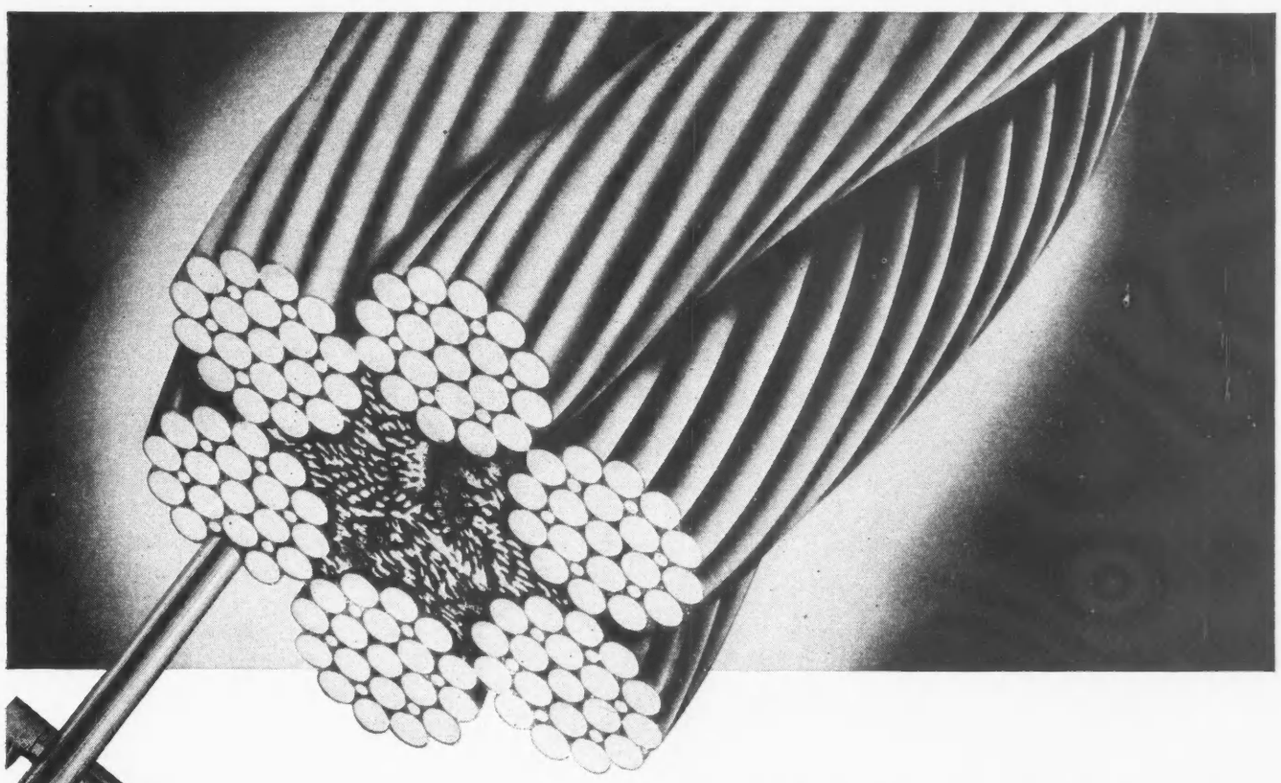
Another wildcat showing has been reported by Carter Oil Company's Harley 1, CNE NE 24-2s-4, Stephens County. It had stains of oil at 2881 feet. Cores are to be taken before the hole is drilled deeper. This test is on a community block and the hole is scheduled to go to 8,000 feet if production is not found shallower.

Acreage dealing through sales of Indian lands and private transactions indicates that both Caddo and Grady Counties will have several tests under way this year. Two sales of Indian lands in recent months in Caddo County resulted in 48,000 acres being assembled.

Tussy Field Leads

The Tussy field continues to lead in activity for a proven area of south Oklahoma. The best well ever completed in the field came in last week when Miller 2, NW SE 5-1s-3w was completed by Skelly Oil Company for 135 barrels in 12 hours of swabbing. The well is on the Carter County side of the pool. The hole was drilled to 2770 feet and plugged back to 2500 before eight-inch casing was set at 2320 feet. Casing, however, was perforated between 1755 feet and 1785 feet.

Carter Oil Company made a 25 barrel pumper out of Wright 1 NEc SE 32-1n-3w. It is producing from between 2615 feet and 2636 feet, the total depth. The well flowed through an eight-inch choke.



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UNITED STATES STEEL

Shows in Viola

MEDICINE LODGE TEST MAY PRODUCE OIL

WEEKLY STAFF REPORT

Wichita, Kan.—What may develop into an oil producer in an area previously considered restricted to gas is the test of Barber Oil Company in Medicine Lodge pool of Central Barber County, Kansas.

The test, Holmes 1, CE ½ SE 15-33s-13w, had Mississippi lime between 4565 and 4581 feet, and showed for about 1,500,000 cubic feet of gas. Upon deepening to 4845 feet where the Viola lime was topped, the gas increased. It again increased at 4847 feet, where the well began to spray oil.

Operators were sufficiently encouraged by the show of oil to run casing and erect tankage for a complete test.

Warkentine Extended

An extension has been counted for Warkentine pool of Harvey County by Dickey Oil & Refining Company et al's Masters 1, NEc SW 14-23s-2w. The well, located about ½-mile southwest of production, filled 2400 feet with oil from chat at 2961 feet. The operators pumped 150 barrels in a production test.

Wayne Cameron et al's Homer Smith 1, SW SE SE 13-27s-2e, a wildcat location seven miles east of Wichita, found shows in Kansas City lime between 2371 and 2398 feet. No effort is being made at this time to test the possibilities of production from this pay as the operators desire to deepen to the horizons productive in Eastborough pool, just east of Wichita. If no oil is obtained at greater depths it is intended to plug back and acidize.

Another Pool Indicated

Another well which may have indicated a new pool, but that is also being deepened is Clyde Pulse et al's Payne 1, SW NW NE 4-22s-7w, Rice County test that reported 300 feet of oil in the hole from below the Kansas City lime. Operators are carrying the test to deeper pay strata.

In the same county, Windsor Oil Company is to spud Smith 1, NW SW NE 22-25s-1w, a semi-wildcat ¾-mile north of production in Cross pool.

Continental Oil Company's Ainsworth 2, SEC NW 30-18s-7w, on the east side of Geneseo pool of Rice County, was completed for 1023 barrels from Siliceous lime after acidization. Total depth was 3186 feet. This completion strengthens the east edge of production.

Silica pool of the same county had a completion good for 946 barrels and Wenke pool had two completions during the week for a total of 961 barrels.

A 12-hour test of Simpson and Noble, Incorporated, et al's Hiss 2, in the Hiss Pool of Barton County, made 1053 barrels from Lansing lime at 3280 feet after acidization. Gas with the oil was estimated at 25,000,000 cubic feet. In the same county, the Texas Company's McLean 1, SWc NE 25-17s-11e, at the north end of Bloomer pool, pumped 448 barrels in 12 hours. The well is to be acidized.

Large Ainsworth Well

Stanolind Oil & Gas Company's Reiman 1, SWC NW 34-16s-13w, was completed as the largest producer in the Ainsworth pool of Barton County. On potential test the well pumped 1624 barrels of oil from Siliceous lime at 3373 feet.

A number of tests in Reno, Barton, Harvey and other counties have entered the routine drilling stage with possible productive horizons below present drilling depth. Lario Oil & Gas Company's Cress 1, NEc 13-11s-17w, Ellis County, is drilling for the Siliceous lime, expected at about 3300 feet. Bell Oil Company and Helmerich & Payne's Benson 1, NEc 5-25s-6w, south of Hutchinson in Reno County, found the Viola and Wilcox formations dry and were drilling deeper. In the same county, Indian Territory Illuminating Oil Company's Schrepel 1, SEc NE 26 20s-11w, south of Peter Pool, topped Lansing lime at 3025 feet and was reaming the hole before drilling deeper. This test is southeast of Ellinwood.

Kansas operators have located a number of wildcat wells within the past week that will be followed with more than usual interest. From the standpoint of possible future development, Couch 1, SWc SE 13-30s-5s, a unitized test being started by Gulf Oil Corporation, Sinclair Prairie Oil Company, The Texas Company and Bay Oil Corporation, is possibly the most important of the list. This location, between Fox-Bush and Eastman pools of northeastern Cowley County, is believed on the trend of shore lime sedimentation as indicated by the United States Geological Survey's analysis of Bartlesville accumulations. Minor production from this and other sands occurring in the region is widely scattered in this section of the county, and is general at depths of less than 2,000 feet.

Also in southeastern Kansas is Dannells, Freed et al's Payne 1, SWc SE 32-33s-13e, east of Sedan in Chautauqua. This location is spudded to test the Siliceous lime expected between 1800 to 1850 feet.

Wildcats Near Completion

A number of outpost locations along the trend of production in northwest Kansas are expected to open new areas with completion. A few scattered tests are now drilling favorable locations. Phillips Petroleum Company's Mainquist 1, SW SW NW 9-9s-17w, southeast of Dopita pool of Rooks County, is in upper strata in wildcat territory. In the same county, Snowden & McSweeney's Hindman 1, CE½ NW 35-7s-17w, southeast of Stockton. was plugged back to 3123 feet in Lansing lime after getting water in the bottom of the formation. Higher oil shows gave indications that this well may make a good producer. Lansing lime was topped at 3023 feet, with saturation between 3095 and 3101 feet.

Minor Completions Recorded

A number of minor completions have been listed for the shallow production of southeast Kansas during the past week, again indicating the increased interest in that part of the Mid-Continent. Some of the wells being completed are to the shallow gas pays, to increase distribution volumes, and other wells are being completed to oil sands between 800 and 1800 feet.

Loyd, Frost, Study et al's McKinley 4-A, SWc NE 33-31-1e, in the Weathered pool of Cowley County, one of the deepest pools of the area, came in for 3084 barrels flowing from Siliceous lime at 3289 feet. This location definitely extends activity to the south as it is the furthest south producer from this formation.

Other scattered wildcat locations announced late in the week were Bradley et al's Ginter Heirs 1, NWc 13-20s-8w, south of Lyons in Rice County; Dickey Oil Company et al's Boger 1, SE NE 15-16s-13w, in northern Barton County, and Murphy's Masonic Home 1, C NW 1-26s-36w, in extreme southern Kearny County, where equipment is being moved to the location.

THIRTY STARTS

Wichita. — Although Kansas operators reported four less starts last week than were reported for the previous seven-day period, activity remains normal throughout the state. Of the 30 reports made, nine were from Russell County, five were from Reno County and four were from Rice County. Barton County reported three new locations and Butler and Woodson counties two each. One report was received from Cowley, Ellsworth, Greenwood, Stafford, and Sumner counties.

Twenty-nine completions were counted by Kansas operators during the past week, 23 being oilers with a total initial production of 24,383 barrels. Two gas wells were completed with a total open flow of 20,933,000 cubic feet of gas. Two locations were abandoned and there were two failures in the state.

J. T. SANFORD of Magnolia Petroleum Company was elected secretary and treasurer of the North Texas Geological society to replace Frank Bundy, who has moved to Houston.

BUILT FOR
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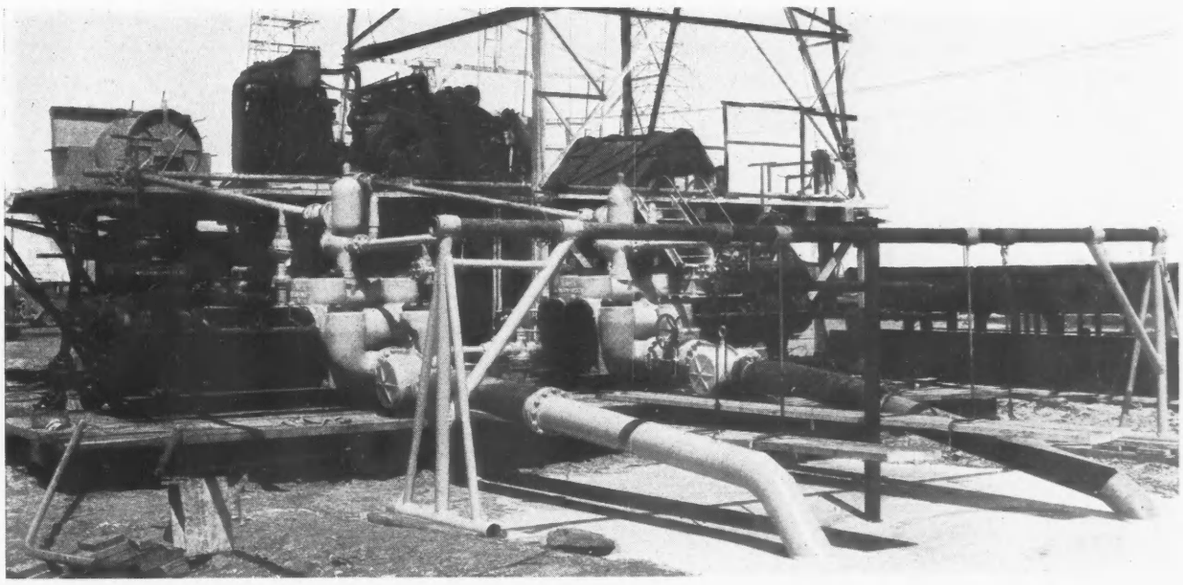

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Increase Field Work

HIGHER ALLOWABLE GIVES IMPETUS TO DRILLING

WEEKLY STAFF REPORT

Hobbs, N. M.—Crude output of New Mexico's fields was advanced to 103,200 barrels daily effective March 1, thereby strengthening its position as the sixth largest producing state. Allowable production was boosted 5600 barrels daily on the above date by the Oil Conservation Commission in response to increased crude purchase nominations. All of the increase was allocated to Lea County fields served by major pipe line companies. Production quota for the remainder of the state, embracing fields in Eddy and San Juan Counties, and the Maljamar field in western Lea County has been pegged at 4610 barrels daily since last February 1, as their market is restricted to the demands of local refineries.

The revised production schedule places New Mexico's output 15,000 barrels above the level recommended by the United States Bureau of Mines for March. Allowable of Lea County wells prorated on a flat well basis was advanced 3 barrels to 93 barrels per well, while the Monument field, which is prorated on acreage and bottom hole pressure factor, was advanced to 27,449 barrels daily from 301 wells. Average crude yield per well in the latter field was raised from 88.2 barrels to 91.19 barrels daily effective March 1, including 10 marginal wells that produce their maximum output of 362 barrels daily.

More Drilling

Supported by progressive gains in production allowables, Lea County operators are enlarging their drilling programs. This county recorded 18 new locations the past week, as compared to 16 the previous week. The Monument field accounted for 11 of the new projects, and 9 of the 18 oil and gas completions appearing on the current field report.

Southwest edge location for the Eunice lime field contributed a high natural flow when The Texas Company's J. M. Rector 3, NE NW SE 30-21s-36e, gauged 102 barrels oil per hour through open tubing from saturated zone at 3850-3950 feet, with an elevation of 3625 feet. Gas/oil ratio was 950/1. Normal location at center of a 40-acre unit was avoided in drilling this test since it was given a doubtful rating for production. In the extreme south end, Oil Well Drilling Company et al's State 1-A, C NW NW 16-22s-36e, is a new operation. Tide Water Associated Oil Company has started operations on R. M. Marshall 1, C SW NE 13-21s-36e, situated about ¾-mile east of nearest production. Ohio Oil Company's State-McDonald 6, C SE SW 16-22s-36e, is a new project, serving as a north offset to Mid-Continent Petroleum Corporation's H. D. Greer 1, which gauged 192 barrels of oil in 8 hours after using 6000 gallons of acid in lime at 3716-3794 feet. Gulf Oil Corporation's State-Leonard 4, C SW NE 22-21s-36e, tested 50 percent bs&w when produced through tubing at 3905 feet, or 300 feet sub-sea, and will be plugged back.

Phillips Petroleum Company has started operations on State-Edna 1 and State-Mex 1, situated in the NW and NE 40-acre unit of 30-20s-37e, and will aid in shortening the gap between the Eunice and Monument field. Bert Fields et al's State 1, SW SW NE 32-20s-37e, is rated at 55 barrels daily natural flow after nitro shot and dual acid treatment of lime at 3875 feet, or 330 feet sub-sea. Amerada Petroleum Corporation's State 2-W, C SW NE 30-20s-37e, which also encountered tight lime condition in the north end of the Eunice field, is showing for a small producer with some bs&w present after using an aggregate of 12,000 gallons of acid in three applications at 3888 feet, or 350 feet sub-sea. It tested mostly gas when acid was used twice at 3850 feet. Continental Oil Company's Meyer 18-B-4, Lot 2, 4-21s-36e, an inside location, has been given a second shot, consisting of 90 quarts of nitro at 3737-3788 feet after failing to make its allowable after shot at 3840 feet.

Ohio Oil Company has started operations on J. W. Grizzell 1, C SW SE 5-22s-37e, offsetting a semi-wildcat producer in sandy-lime southwest of Eunice. Due south of the town, Empire Oil & Refining Company's R. L. Brunson 1, NW NW SE 4-22s-37e, flowed 134 barrels of oil on 7-hour gauge after using 2000 gallons of acid solution in sandy-lime at 3628-3750 feet. It will require three offsets. Gulf Oil Corporation's H. T. Mattern 1-B, NE NE SE 30-21s-37e, offsets production in the Hardy or North Eunice area.

NEW MEXICO

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
LEA COUNTY (Eunice Field) —		
Atlantic Ref. Co., State 2-M, c nw se 36-20s-36e	4000	3850
Bert Fields, Fred Turner & W. A. Hudson, State 1, sw sw ne 32-20s-37e	55	3875
Gulf Oil Corp., State Janda 4-C, c ne sw 15-21s-36e	2000	3883
Humble, State-Aggies 10, c nw sw 31-20s-37e	1500	3830
Mid-Continent Pet. Corp., H. D. Greer 1, c ne nw 21-22s-36e	576	3794
The Texas Co., J. M. Rector 3, ne nw se 30-21s-36e	2500	3950
LEA COUNTY (South Eunice-Penrose Field)—		
Empire O&R Co., R. L. Brunson 1, nw nw se 4-22s-37e	450	3750
LEA COUNTY (East Jal Field)—		
El Paso Nat'l Gas Co., W. H. Harrison 2, c nw nw 29-24s-37e,	¶30	3650
Geo. W. Toby 1, c se se 12-24s-36e	¶24.6	3685
LEA COUNTY (Monument Field) —		
Amerada Pet. Corp., D. F. Larsen 3, c nw ne 32-19s-37e	3000	3910
D. F. Larsen 4, c sw ne 32-19s-37e	1200	3902
Anderson-Prichard Oil Corp., Britt-Conoco 8-A-7, c sw se 7-20s-37e	4000	3864
Continental Oil Co. et al, H. M. Britt 1-B-8, c ne nw 8-20s-37e	2500	3893
Gulf Oil Corp., State-Graham 2-F, ne ne se 36-19s-36e	500	3908
Whitmire 4, c se ne 8-20s-37e	1200	3881
Humble, State 1-F, c ne sw 17-20s-37e	750	3860
Ohio Oil Co., Laughlin 1, c sw nw 9-20s-37e	4000	3883
The Texas Co., State 2-J, c se sw 24-19s-36e	850	4043

*Failures; †Junked; ¶Million cu. ft. gas.

Six New Tests

Amerada Petroleum Corporation, leading producer in the Monument area, with a current allowable of 6623 barrels daily from 72 wells, announced six new tests the past week. Two undeveloped leases are involved in the starting of operations on State 1-X, C NE SW 16-20s-37e, and W. P. Byrd 1-A, C NE SW 12-20s-36e. Available locations on two leases were utilized in awarding drilling contracts for C. W. Weir 8, C NW NW 35-19s-36e, and J. R. Phillips 4, C NW NE 1-20s-36e. This concern also made location for State 3-F, C NE SW 36-19s-36e, and State 3-V, SE SE NE 36-19s-36e. Amerada Petroleum Corporation's S. Phillips 2, C NE SW 33-19s-37e, gives promise of making a small flowing producer after fourth acid treatment, aggregating 13,000 gallons and nitro shot at 3910 feet, or 341 feet sub-sea. Average yield of 64 barrels of pipe line oil per hour through 1-inch choke was maintained for 9 hours by this concern's D. F. Larsen 3, C NW NE 32-19s-37e, after using 2000 gallons of acid at 3910 feet, and Larsen 4, south offset, flowed 24 barrels per hour through 1-inch choke after 2000 gallons of acid at 3902 feet.

Small flow of 21 gravity oil with air and gas developed by Gulf Oil Corporation's Whitmire 3, CSE NW 8-20s-37e, inside location for Monument area, while drilling with rotary at 1736 feet, was cased off with 7⅝-inch at 2328 feet, and drilling was underway below 2600 feet last week. Nearby completed wells were checked for possible casing leaks, but engineers failed to determine the source of the migratory oil. Whitmire 4, C SE NE 8-20s-37e, was completed flowing 277 barrels oil in 5½ hours at 3881 feet. Gulf Oil Corporation has made location for Bates 1, C SE SE 26-19s-36e. The Texas Company's State 2-J, C SE SW 24-19s-36e, northwest edge location, responded to treatment with 2000 gallons of acid in lime at 4000-4043 feet with a flow of 182 barrels oil in 5 hours.

Natural flow of 30 barrels per hour through open tubing was credited to Humble Oil & Refining Company's State 1-F, C NE SW 17-20s-37e, after drilling to 3860 feet, or 314 feet below sea level. Rig was skidded one location south to drill State 2-F. Continental Oil Company has started operations on State 1-C-16, C SW NW 16-20s-37e. Repollo Oil Company has started work on J. R. Phillips 4-A, NW NW SW 31-19s-37e, and Tide Water Associated Oil Company has announced location for D. L. Laughlin 2,

C NE SW 4-20s-37e. Ohio Oil Company's Laughlin 1, C SW NW 9-20s-37e, flowed 319 barrels of oil in 3 hours from lime at 3883 feet, with production restricted to 1-inch choke the first 30 minutes, then through open 2½-inch tubing the remainder of the gauge.

Vacuum Well Plugs Back

Magnolia Petroleum Company's State 1-G, NW NW NE 24-17s-34e, second test for the Vacuum pool, was idle last week after plugging back to 4770 feet to exclude hole full of sulphur water encountered at 4896-4905 feet. It will be shot and acidized, with prospects of making a small oil well. Production test has not been made by J. W. Brown and Reynolds' Parcell-Conoco 1, C NW SE 8-21s-38e, eastern Lea County wildcat oil producer, since killing the oil and gas flow to cement 5½-inch pipe at 4200 feet. The well flowed 28 gravity oil by heads beginning February 10 from dolomite lime at 4371-73 feet, with an elevation of 3573 feet.

Exploratory work around the Getty shallow oil field, eastern Eddy County, has been stimulated by the recent completion of Neil H. Wills et al's N. E. Colgrazier-Conoco 1, C NW NE 20-20s-30e, about two miles east of production, swabbing 132 barrels of 20.5 gravity oil initial from soft lime at 1442-1443 feet. Top of lime was logged at 1108 feet, with an elevation of 3210 feet. Wills et al have moved in machine to drill Chase 1, C NW SW 6-20s-30e, and H. C. Wells et al have started operations on State 1, NW SW NW 19-20s-30e, E. A. Hall & Neil Wills' Hogarty 1, C SW SW 14-20s-29e, will drill with machine.

Hobbs, N. M.—Atlantic Pipe Line Company has connected to approximately 4,000 barrels daily production in the Eunice field, Lea County, since the extension of its gathering system from Hobbs field station and tank farm, using 16 miles of 6-inch welded line. The company is also handling 3348 barrels daily from the Hobbs field.

TEXAS PANHANDLE

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CARSON COUNTY—		
Gulf Oil Corp., E. Cooper 17	711	3098
J. M. Huber Pet. Co., S. B. Burnett 2-M	¶42	2815
GRAY COUNTY—		
Champlin Ref. Co., H. B. Lovett 2	531	2981
Kewanee O&G Co., J. S. Morse 11-H	287	2630
Manston Oil Co., Sullivan 3	316	3253
Southern Pet. Exploration Co., Vaughan 7	669	3230
HUTCHINSON COUNTY—		
J. H. S. Bonner, Tr., J. W. Moore 1-A	613	3178
Gulf & Panhandle Ref. Co., Dial-Perkins 66	354	3129
Harvester Oil Corp., W. B. Haile 6	904	3055
Phillips Pet. Co., Bessie Record 1	¶10½	2555
Harry Stekoll et al, Belle Wisdom 5	381	3130
Travelers Oil Co., W. B. Haile 3	547	3090
Tripplehorn Bros. et al, R. C. Ware 5	584	3148
MOORE COUNTY—		
Dave Rubin & Phillips Pet. Co., P. O. Beard 3	¶67.1	3081
POTTER COUNTY—		
Canadian River Gas Co., Lee Bivins 19-A	¶20.8	2625
WHEELER COUNTY—		
C. T. Palmer et al, A. Nelson 4	¶1.9	2275

*Failures; †Junked; ¶Million cu. ft. gas.

Tests Demanded

LEASES IN NORTH PERMIAN BASIN CALL FOR DRILLING

NORTH & WEST TEXAS

WEEKLY STAFF REPORT

Midland, Texas.—The north portion of the Permian Basin section of West Texas is in line to receive a number of additional exploratory tests as a sequel to the intensive lease and royalty buying program waged by companies and individuals for more than a year. Scattered wildcat producers completed from the deep lime zone in Gaines, Dawson, Yoakum and Cochran Counties have been accepted as proof that the north end of the basin area may yield important crude reserves. Four of the six wells in these counties are capable of flowing in excess of their proration allowable. All are isolated from rail or pipe line transportation, and the available market is restricted to tank truck sales and fuel sales to drilling rigs.

Contracts Forcing Activity

Lease owners have been inclined to play a waiting game on drilling in the upper basin, as the average depth of a decisive test is about 5000 feet. Expiring lease contracts are beginning to force additional drilling, and for this reason a number of tests will be launched within the current year. Competitive buying has boosted acreage prices. Large blocks scheduled for early expiration can be drilled for less money than the cost of lease renewal.

Failure of lease owners to crack down with drilling programs in the close vicinity of the flowing wildcat producers can be charged to some extent to the comparatively thin section of oil and gas producing formation logged above the water level. Porosity of the lime is not as favorable for the accumulation of oil as is found in the main section of the basin area.

New Yoakum County Wildcat

Northeastern Yoakum County gained an active wildcat early last week when Magnolia Petroleum Company moved in materials to drill Mrs. M. E. Taylor 1, NEc of Section 201, Block D, John H. Gibson Survey, about 13 miles northeast of Plains. Location is near the center of a 6½-section solid block. The company is preparing for a 5400-foot test. In Southeastern Bailey County, a block of 14,000 acres out of the Yellowhouse Land Company ranch has been leased by W. L. Pickens, E. L. Wilson, Thornton Lomax, Jr., and R. F. Duggan for a 5500-foot test to be started by May 1. Location will be in Labor 4, League 700, State Capitol Lands, about one mile from the southeast corner of the county. The block overlaps parts of four counties.

Two new tests for Gaines County are in prospect. Tom Sloan et al are credited with having sold protection spreads to five majors against a projected 5500-foot wildcat test to be drilled near SWc NW¼ Section 425, Block G, C. C. S. D. & R. G. N. G. Survey. Shell Petroleum Corporation is credited with having donated the west 320 acres of Section 425 and $6,000 cash to support the wildcat.

To Try Seminole Again

The Seminole structure, Gaines County, rated as the most promising oil producing area for the north Permian Basin area, will be given a second oil test by Shell Petroleum Corporation. Derrick has been erected at C NW NW

EXTENSIONS

Johnson Ranch and East Bryson widened

Wichita Falls, Texas. — Important east extension for the Johnson Ranch field, situated near the west line of Foard County, was scored the past week when The Texas Company's J. H. Johnson 11, near SE NE NW Section 37, Block L, S. P. Ry. Survey, flowed by heads with an estimated potential of 100 barrels oil from Canyon lime at 3661-3662½ feet. It is about 2500 feet east of nearest production on the company's 9723-acre leasehold. Top of lime was logged at 3654 feet, and 7-inch pipe cemented at 3556 feet. The saturated lime formation was scheduled to be treated with 2000 gallons of acid late last week.

Productive limits of the East Bryson field, Jack County's most important oil area, were extended to the northeast corner of the town of Bryson by Tom Patton, Inc., Dallas, et al's Taylor 1, which developed hole full of water from Strawn sandy-lime at 2964-2982 feet. The hole was drilled to 3055 feet. Hanlon-Buchanan, Inc.'s T. T. Bouldin 1, SWc of W. C. Ry. Survey, A-906, located about 1½ miles east of the East Bryson field and about ½ mile northeast of an isolated pumper, logged oil show at 2849-2854 feet, and was drilling at 3110 feet, according to late report.

In Grayson County, Olson Drilling Company, Jas. H. Gardner et al's D. R. Utiger 1, Ordovician lime test for the Preston Anticline, was drilling at 4477 feet in the Mazarn shale section of the Ordovician. It is contracted to drill to 6000 feet.

Section 220, Block G, W. T. Ry. Survey, on fee owned 50-50 by Amerada Petroleum Corporation and Humble Oil & Refining Company. Location is an east offset to Harry Adams et al's S. J. Averitt-Ohio 1-A, which was officially completed last January flowing 234 barrels 34.5 gravity oil initially after plugging back from sulphur water at 5054 feet to 5032 feet. The producer is in the center of a 40-acre lease, and is due for additional offsets. Amerada Petroleum Corporation has not announced the location of its proposed Seminole area test.

Active wildcats in Hockley and Terry Counties are being watched closely as they near a decisive level. In the latter county, W. L. Pickens et al's J. B. Lewright 1, CNE NE Section 1, Block C-37, was drilling with cable tools at 4820 feet after logging first solid lime marker at 4470 feet, with an elevation of 3185 feet. The Texas Company et al's Slaughter 1, southwestern Hockley County, was drilling at 4470 feet after testing seven-inch pipe cemented at 4443 feet. Top of the lime was logged at 4205 feet, with an elevation of 3560 feet.

Plugging Off Sulphur Water

Texas Pacific Coal & Oil Company's Ruth Bennett 1, second producer for southeastern Yoakum County, is attempting to plug off sulphur water logged at 5300-5305 feet. It was originally completed last January flowing 571 barrels potential from lime at 5183-5236 feet, and failed to score a production gain in deepening, but the lower section of the lime carried porosity that may be productive elsewhere upon the structure.

Shell Petroleum Corporation's E. F. King 1, CSE SE Section 10, Block A-42, Andrews County semi-wildcat, showed 180 feet of oil with drilling fluid when given drill stem test at 4270-4470 feet, with an elevation of 3200 feet. Pipe has been cemented to proceed with completion. It is one mile west of Humble Oil & Refining Company's B. S. Walker 1, which was completed in December, 1934, flowing 50 barrels of 29.8 gravity oil initial after plugging back from 4538 feet to 4490 feet to exclude water and for a nitro shot.

Record Potential Flow

A new record for potential flow in the Henderson field, Winkler County, was established with the completion of Emperor Oil Company, Fort Worth, et al's J. W. Hess 3, an inside location, rated at 10,256 barrels daily from dolomite lime at 3071 feet. The well produced at the above

NORTH TEXAS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ARCHER COUNTY—		
Nick Anagos et al, J. S. Bridwell 10	35	915
L. T. Burns et al, Benson 2-B, sec 1398	*	980
Fresno Oil Co., Prodeaux 21	7	668
Miss Nancy McChesney et al, G. M. Benson 1, sec 1829	7	849
J. T. Miller et al, Oil Inv. Co. 1, lot 6	*	1210
A. P. Nicholson et al, G. Williams 1	*	601
Solo Oil Co. et al, L. F. McCrory-Wilson 1	*	2328
J. G. Steele et al, W. E. Brown 1, sec 2450	*	1507
W. M. Waterman et al, G. Williams 2	*	621
CLAY COUNTY—		
Bourbon Roy. Co., B. Landrum 2, blk 4	5	672
Bridwell Oil Co., Jos. Stephenson 4, blk 56	*	315
B. M. Dinsmore et al, H. Bowen 1, sec 2641	*	925
COOKE COUNTY—		
Mack Oil Co., Felderhoff 2	*	742
F. W. Merrick, Inc., Knabe 33	20	834
Schermerhorn Oil Corp., F. J. Hess 7	21	880
DENTON COUNTY—		
C. V. Minnich et al, C. N. Price 1	*	290
Mullins & Weil, J. W. Maxwell 1	*	1258
JACK COUNTY—		
Bennett Pet. Corp., S. E. Nichols 1	173	3020
Geo. W. Buckner et al, W. H. Smith 1	5	325
W. H. Smith 2	*	362
Burrows & Hall, Moore-Smith 1	*	400
Cato Oil Co., Bryson 2	480	3061
B. Cockburn & Boase, R. R. Clayton 1	*	3105
Hill & Hill, S. M. Jones 2	460	3045
S. M. Jones 4	250	3120
Thos. D. Humphrey, J. M. Bridwell 3	488	3085
Harry S. Moss et al, W. B. Lowe 3	*	3147
O. J. Perren et al, J. R. Clayton 4	384	3023
Jack Stinson et al, W. H. Smith 1	2	400
MONTAGUE COUNTY—		
Continental Oil Co., A. B. Hinton 6	36	817
W. W. Jones 11	35	876
Gibson-Jennings, Inc.-Sinclair Prairie, Holt 3	230	1739
WICHITA COUNTY—		
Bohner, Crenshaw & Whitehill, R. Brannon 20, blk 83	*	1737
King Oil Co., Waggoner Est. 1-S	5	1966
Palmer & Chenault, S. H. McCarty 1	*	1824
The Texas Co., W. B. Honaker 74	19	1058
WILBARGER COUNTY—		
Barkley & Meadows, Waggoner Est. 20-C, sec 5	15	1128
Lawson & Leavell, Waggoner Est. 11-A, sec 109	80	1655
H. W. Roberts et al, Waggoner Est. 6-A, sec 40	8	1212
Waggoner Ref. Co., Waggoner Est. 6-CC	90	1114
YOUNG COUNTY—		
Alexander & Long, W. R. Goldston 1-B, blk 9	*	4204
Paul Atchley et al, J. P. Atchley 2, sec 226	45	1005
Duncan, Holt & Marchman, Benson 17, sec 1391	*	1176
J. W. Eagleston et al, S. O. Wall 2	*	600
Evans & Todd, J. R. Jackson 1	*	730
Holbrook & Woods, S. E. Watson 11, blk 22	*	601
King Oil Co., C. W. Johnson 5-B	*	524
Rathke Oil Co. et al, Wadley 3	4000	4012
Swink & Wagner, H. P. Cunningham 1, sec 3404	*	572
L. W. Wickes et al, W. B. McCluskey 1	*	4214
D. L. Wolf et al, C. B. Gant 1, sec 1485	*	620
Wooten & Wilson, S. J. Furr 1, sec 36	*	801
Yorktex Pet. Co., F. G. Burnett 1	20	4520

*Failures; †Junked; ¶Million cu. ft. gas.

WEST TEXAS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ANDREWS COUNTY (Wildcat)—		
American Liberty Oil Co., A. L. Mayhew 1	*	5000
CRANE COUNTY (McCamey Field)—		
Bert Fields et al, A. Gibbs-Conoco 3	715	2250
John Hertz et al, E. S. Hughes 1-C	*	2371
CRANE COUNTY (Gulf-McElroy Field)—		
Gulf Oil Corp., McElroy 146	452	2957
CRANE COUNTY (Waddell Field)—		
Gulf, M. F. Henderson 7	5376	3575
E. N. Snodgrass 2	101	3550
ECTOR COUNTY (Goldsmith Field)—		
Atlantic Ref. Co., TP Land Trust 1-A	1886	4265
Landreth Prod. Corp., C. Scharbauer 1-C	2156	4225
GLASSCOCK COUNTY—		
Conoco & Group 1 Oil Corp., Settles 24-S	485	1267
HOWARD COUNTY—		
Ennisbrook Oil Corp., Texas Land & Mtg. Co. 11	463	2813
Shasta Oil Co., G. M. Dodge 10	277	2755
JONES COUNTY—		
Bridwell Oil Co.-L. Fikes, Jennings 7	295	1943
Danciger O&R, Inc., Owen-Snebold & Fortex, Dorsey 4	717	2226
N. H. Martin & Son, H. Dorsey 5-C	132	2155
Frank A. Oyster et al, C. H. King 1	*	1806
PECOS COUNTY (Wildcat)—		
W. R. Stafford, Bruce McKague & Lee Pet. Corp., J. L. Nutt 1	*	2224
TAYLOR COUNTY—		
H. Crissman et al, City of Abilene 1	*	3360
L. Dunn & H. McAllister, M. Bowles 1	*	1225
UPTON COUNTY (McCamey Field)—		
R. W. Fair Oil Co. (was J. E. Lucas), Cordova Union 2	160	2204
R. H. Henderson et al, M. L. Baker-McMan 1-D	636	2302
Homestead O&G Co. (was J. McLester), Hughes-Pure 3	1021	2733
Shell, Della Bowen 35	382	2200
WARD COUNTY—		
Atlantic Ref. Co., W. D. Johnson 26	133	2534
Atlantic-Standard Oil Co. (Texas), University 1-A	108	2905
Eastland Oil Co., Hathaway 5	6710	2649
Empire O&R Co., W. W. McDonald 21	843	2460
FHE Oil Co., K. Green 3	556	2452
Jess Gibson et al, S. M. Brown 1	¶5	2304
Gulf Oil Corp., Hutchings 67	819	2748
Humble, University 9-F	336	3120
Richardson Oils, Inc., Hathaway 17	†	497
Hathaway 17-A	2584	2659
Skelly Oil Co., Hathaway 5	9672	2604
Standard Oil Co. (Texas), J. F. York 26	678	2528
Tex-Mex Pet Corp., Roberson 1	*	2573
WINKLER COUNTY (Emperor Field)—		
Skelly Oil Co., S. M. Halley 18	614	2885
WINKLER COUNTY (Henderson Field)—		
Emperor Oil Co., J. W. Hess 3	10,256	3071
W. K. Royalty Co. (was Uscan Oil Co.), Walton-Humble 3-B	7500	3066
WINKLER COUNTY (Kermit-Sayre Field)—		
Humble, N. R. Colby 12-A	1274	3095
Monday Oil Co.-Bert Field, Abilene State Bank-Conoco 12	1188	2992
Sayre Oil Co., J. F. Howe 5-C	1017	2966
Shell Pet. Corp., Ida Hendrick 7-L	765	3065
Sinclair Prairie, J. B. Walton 13-C	1027	2975
Skelly Oil Co., L. Daugherty 2	748	3025
T. P. Coal & Oil Co., Daugherty 16	427	2955

*Failures; †Junked; ¶Million cu. ft. gas.

WEST CENTRAL TEXAS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BROWN COUNTY—		
W. Thomason et al, Lawson 1	*	750
West Texas O&G Co., Crothers-Smith 4	¶¼	1697
CALLAHAN COUNTY—		
Hal Hughes et al, Williams 2	*	2325
Mesa Verde Oil Co., Klepper 1	8	1793
W. J. Murry et al, Ross 2	*	1302
Samples & Brodie, Taylor 2	*	560
J. V. Wright et al, Warren 1	*	1281
SHACKELFORD COUNTY—		
Ambassador Oil Corp.-Ungren & Frazier, Simpson 5	10	1912
Baker & Pardue, Davis 2-B	67	1402
Butler & Horn, Morris-Buie 9	185	1605
Butler, Calhoun & Boynton, Green 1	*	1708
R. B. Farris et al, Baker 2	*	1719
L. Gorsuch et al, Fee 1-B	*	1546
Hanrahan & Lucas, Casey 3	*	885
J. Hart et al, Elliott 1, sec 12	*	787
Wm. J. Healey et al, Clarke 7	11	681
Clarke 8	9	673
Hoffman & Page Co., Morris-Buie 24	10	1594
Humble, Morris-Buie 1-B	*	1887
Jones & Stasne et al, Davis 1	*	1740
Kittery Oil Co., Erharat 6	*	837
Craig Morton et al, Green 2	*	560
Owens, James & Jones, Morris-Buie 6-A	200	1617
Owens-Snebold Oil Corp., O. A. Ivy 1	352	1938
Roeser-Pendleton, Inc., Dawson 16	135	1619
Dawson 17	150	1621
Dawson 18	184	1614
Roeser-Pendleton & Humble, Morris-Buie 10, sec 191	¶4	1670
T. K. Simmons et al, Harvey 3	45	1685
Tannehill et al, Mathews 33	*	1195
PALO PINTO COUNTY—		
Palo Pinto Oil & Gas Co., Zimick 1	†	3100
STEPHENS COUNTY—		
Mudge Oil Co., W. P. Smith 1	*	3374

*Failures; †Junked; ¶Million cu. ft. gas.

rate through open 2½-inch tubing, according to an official of the company.

The northwest edge of the Estes field section of the Grand Falls district, Ward County, contributed one of the large wells when Eastland Oil Company's Hathaway 5 earned a potential rating of 6710 barrels after 325-quart nitro shot in sandy-lime at 2472-2634 feet, with the hole bottomed at 2649 feet. The well produced 839 barrels oil in three hours. General Crude Oil Company, Houston, has made four locations on the J. F. Hathaway 40-acre lease adjoining the above property on the southwest.

Austin.—Both House and Senate last week approved a bill to permit leasing of lands of the Texas A. & M. College for oil and gas development.

As the bill was amended in the Senate to include certain prison lands as well, it will be necessary for the House to concur in this amendment.

EAST TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
JOINER AREA—		
Harry Hanbury et al, M. M. Cross-Ohio 3 (199.34-ac)	300	3713
Humble, M. Joyner 3 (20.55-ac)	4800	3791
Kline & Powers (was Marks O&G Co.), M. Lee 4 (37.2-ac)	7000	3645
H. E. Lasseter, Simpson & Spruiell, H. E. Lasseter 1 (1.41-ac)	3600	3809
Magnolia, T. O. Mason 16 (147-ac)	120	3675
L. W. Powell et al, J. J. Denton 1-A (10-ac)	50	3742
Sun Oil Co., G. Patterson 1 (50-ac)	1500	3733
The Texas Co., J. E. Stubblefield 6 (45.2-ac)	1200	3646
Tide Water Associated, M. Thompson 3-B (10-ac)	1500	3675
Wheelis Oil Corp., G. Patterson 13 (172.64-ac)	750	3728
KILGORE AREA—		
Barnsdall Oil Co., J. Douglas-Shell 14 (137.93-ac)	1500	3673
Constantin & Co., W. D. Tucker 6 (296-ac)	100	3647
Gulf Oil Corp., O. R. Baton 10 (56.61-ac)	250	3668
Humble, Dora Thomas 20 (59.05-ac)	4000	3602
Iowa Payne Oil Co., W. B. Walker 7 (42.33-ac)	1200	3667
Kinso Oil Co., C. Wells 5 (25.4-ac)	3000	3673
L. & M. Oil Co., J. M. Acuff 2 (1.27-ac)	3600	3575
Alex McCutchin et al, J. S. & F. Elder 2 (20-ac)	3000	3607
R. E. Moore & Roy A. Reynolds, Z. Elder 2-A (3.1-ac)	4000	3559
J. C. Prine-R. E. L. Silvey, P. C. Warren 5 (22.7-ac)	500	3764
Shell, J. B. Watson 66 (385.2-ac)	9200	3618
Tide Water Associated, M. B. Hughey 28 (200-ac)	5600	3535
M. B. Hughey 29 (200-ac)	5600	3523
Winston Oil Corp., Paul Jones 12 (62-ac)	8000	3663
LONGVIEW AREA—		
Bert Fields et al, W. L. Blackstone 3 (5-ac)	10,000	3596
Danciger Oil & Ref., Inc., T. B. Stinchcomb 10 (87½-ac)	500	3839
Sabinas Oil Corp., J. W. Falvey 6-B (30-ac)	6500	3710
Shell, A. N. & V. King 26 160-ac)	8800	3604
H. R. Smith, Inc., W. A. Bauknight 12 (70.6-ac)	9200	3610
Southland Drlg. Co.-United E&W Oil Co., O'Byrne 30 (304-ac)	240	3720
O'Byrne 32 (304-ac)	1000	3729
Stanolind, Pet Hopkins 20 (100-ac)	8500	3610
E. M. Whatley 14 (39.79-ac)	9000	3528
Stidham & Thrasher, E. O'Byrne 8 (53-ac)	480	3812
Sun & Seaboard Oil Corp., J. M. Haynes 37 (203-ac)	10,400	3618
Tide Water Associated, W. E. Jones 14 (80-ac)	†	3612
J. A. Woods et al, O. J. Phillips 4-B	*	3754

Facilities Taxed

INCREASED ALLOWABLE WILL CROWD TALCO OUTLETS

WEEKLY STAFF REPORT

Tyler, Texas.—Increased production allowables given the Talco and Sulphur Bluff fields on March 1 will tax the available market and transportation facilities for this low gravity crude. The proration quota of Talco wells was boosted from 85 barrels to 95 barrels daily on the above date, while the output of Sulphur Bluff was advanced from 1125 barrels to 2375 barrels daily. In the latter field, the individual well allowable is based 50 percent on acreage and the remainder on potential. The oil is transported by pipe line to Talco in reaching a market.

Producing 17,770 Barrels Daily

During the week ending March 1 Talco was credited with producing 17,770 barrels daily from 222 flowing and pumping wells. Humble Pipe Line Company transported 10,462 barrels daily through its eight-inch carrier, and the remainder was handled by independent buyers, who are largely dependent upon tank car shipments from racks at Talco and Mount Pleasant. Talco refineries have not succeeded in absorbing any appreciable volume of crude. Properties in the Sulphur Bluff field that are not covered by crude sales contract have accumulated back allowable lately.

Two recent completions in the extreme east portion of the Talco field and isolated from previous drainage have developed bottom hole water. Humble Oil & Refining Company's J. M. Belcher 1, SWc of a 166.37-acre lease, G. Belcher Survey, began making three barrels water with its 85-barrel allowable on February 15 and has plugged back from 4373 feet to 4350 feet. It was originally completed last November 16, pumping 133 barrels initially after plugging off water at 4390-4401 feet, and perforating seven-inch pipe between 4253 and 4364 feet. The same company's Pan-American Life 1, NEc 80-acre lease, A. J. Fry Survey, was completed February 1 flowing 156 barrels initial through a quarter-inch choke from Paluxy at 4220-4332 feet, but showed two barrels water in making its allowble. It will

Company, Well and Location	Init. Prod. Bbls.	Depth
HOPKINS COUNTY (Sulphur Bluff Field)		
Hager-Luse & Russ Pet. Co., Mrs. Rooney Long 1 (39.86-ac)	2500	4518
F. D. Jones Drl. Co., Mrs. S. B. Pierce-Gulf 4 (150-ac)	2000	4490
TITUS COUNTY (Talco Field)—		
Byrd-Frost, Inc., et al, C. M. Carr-Gulf 1 (102-ac)	384	4280
Humble, G. A. McPeters 1 (78.26-ac)	170	4352
K-A Oil Co., W. M. King 1, lot 2, blk 33	264	4313
VAN ZANDT COUNTY (Van Field)—		
Geo. Greer & American-Liberty Oil Co., Freeman 1 (92½-ac)	*	4991
CASS COUNTY (Rodessa)—		
Magnolia, Allday Est. 1, Priscilla Evans sur	563	5930
Ohio Oil Co., R. P. Willis 8, SFIW sur	402	5982
R. P. Willis 14, SFIW sur	456	5944
Phillips, Farrier 6, W. R. Myers sur	338	6120
Texas Co., N. A. Rambo 8, Cass County Sch. Land sur	370	6037
W. M. Hall 5, A. Archer sur	620	6060
United Gas, J. H. Bewley 3, H. Holbert sur	504	5995
R. P. Willis Unit 1, W. Robinson sur	740	6035
E. T. Tyson A-5, J. H. Rives sur	220	6064
G. H. Vaughn Prod. Co., R. P. Willis 3, SFIW sur	498	5965

*Failures; †Junked; ¶Million cu. ft. gas.

GAINS STEADILY

East Texas field has 72 active rigs listed

Tyler, Texas.—Drilling operations in the East Texas field have gained steadily in recent weeks, with 72 active rigs listed on current field reports, as compared to 62 operations the previous week. The field was credited with 37 completions the past week, including one failure and a junked test.

Active drilling program slated for Upshur County leases surrounding Magnolia Petroleum Company's L. K. Cone 100-acre tract, J. P. Justamente Survey, may be abruptly halted since the company's Cone 2 missed the oil zone and was abandoned in water sand at 3761 feet, or 3333 feet below sea level. Cone 1 cored one foot into oil sand to 3735 feet, or 3328 feet sub-sea, and was completed late in January flowing 75 barrels of oil per hour.

The East Texas field entered the current month with an allowable of 453,360 barrels daily from 22,238 flowing and pumping wells, or an average of 20.38 barrels per well, according to Commission records. On March 1 there were 53 dead wells listed, and 16,748 active wells were classed as marginal producers with a maximum allowable of 20 barrels daily.

Nineteen natural gasoline plants in the field are connected to 19,156 producing wells, and more than one third of the total wells are served by the five plants operated by Humble Oil & Refining Company and Sinclair Refining Company.

be plugged back to 4258 feet. Pipe was cemented at bottom and perforated when both wells were drilled in.

J. Z. Werby et al's Sam Williams-Strutton 1, which is seeking production in the lower Trinity series, logged top of anhydrite at 5434 feet, with an elevation of 341 feet, and was drilling at 5600 feet. It is located 2¼ miles east of nearest production at Talco and failed to produce in the Paluxy sand series.

Three New Completions

New completions at Sulphur Bluff include D. S. Hager, W. P. Luse and Russ Petroleum Company's Rooney Long 1, northernmost producer for the A. O. Wetmore Survey, which flowed 128 barrels the first hour and 118 barrels the second hour when tested through casing from Paluxy zone at 4418-4518 feet. This well cut through the fault between 4320 and 4330 feet, and is credited with producing a slightly higher gravity oil than the average for the field. Shell Petroleum Corporation's J. G. Reynolds 1, NEc of 200-acre lease on the west end of production, flowed 24 barrels per hour on preliminary gauge from sand at 4517-4538 feet. F. D. Jones Drilling Company's S. B. Pierce-Gulf 4, flowed 65 barrels oil per hour through choke from sand at 4434-4490 feet and received an allowable of 162 barrels daily. Two additional tests on this 150-acre lease were due to cement casing on top of the Paluxy late last week.

George Greer and American Liberty Oil Company's Freeman 1, situated on the southeast edge of the Van field, tested salt water in Paluxy series topped at 4657 feet, with an elevation of 515 feet, and abandoned at 4991 feet.

BORDER AREA TESTS

Shreveport.—Magnolia Petroleum Company last week located E. A. Hull 2, Thomas Applewhite Survey, Panola County, Texas, the location being 3400 feet southeast of the same company's E. A. Hull 1 in the same survey, completed last December at 5960 feet as a 2,300,000-foot gas well.

In Cass County, McAlester Fuel Company (J. G. Puterbaugh) has made tentative location on a block recently assembled for a 6200-foot test on the J. J. Dooley 200-acre tract, Caloway Davis Survey. Pure Oil Company has recently been taking some leases around this block. R. G. Lawton leased 800 acres in the S. F. Moore and Henry R. Latimer Surveys.

H. A. Stebbinger and associates' Pickering Lumber Company 2, A. Hanson Survey, Shelby County, ¾ mile south of the same operators' Pickering Lumber Company 1, C. F. Henry Survey, reported a gas blowout after test was shut down for a few days at 4920 feet in hard crystallized lime. Operators are coring ahead. Pickering Lumber Company 1 was completed several months ago at 5029 feet, making 11 barrels of distillate per hour and 5,000,000 cubic feet of gas daily.

In Sabine County, E. L. Harris has assembled a 5000-acre block centering around the H. Mackey, W. Murphy and Lewis Warren surveys.

New Deep Sands

EXTENSIONS AND NEW FIELD PROSPECT IN LOWER COAST

WEEKLY STAFF REPORT

Corpus Christi.—More field extensions and new deep-sand discoveries hold attention in the pools immediately surrounding Corpus Christi. One new field was in the making 15 miles southwest of the city, while a new sand has been discovered in a wildcat about 25 miles to the southwest and several important extensions are being effected to the Saxet area immediately west of here.

I. J. Allen and Seaboard Petroleum Corporation's J. O. Chapman et al 2, wildcat 9,000 feet southwest of the London field, Nueces County, was drilling plugs after setting 7-inch casing at 6588 feet. The test cored sand at 6464-71 feet, ran a drill-stem test at 6462-71 feet which in 10 minutes, using a 1000-foot water cushion, developed 1100 feet of 42 gravity oil and 20 pounds pressure. The hole was cored ahead to its present depth of 6717 feet. Sand continued to 6484 feet, carrying fine saturation. Sandy shale was then encountered to 6524 feet. Section from 6524-32 feet cut like sand, but no recovery was available on the cores. An electric formation tester was run and casing set through the section to complete through gun perforation.

From Frio Sand

This new discovery is from the Frio sand, whereas the production in the London field is at 4750 feet in the Catahoula. The potential producer is located 660 feet out of the southwest corner of Section 38, Laureles Farm Tracts, Ramon de Ynojosa Grant.

A new producer from the recently discovered 6900-foot, deepest sand in the Saxet field, is in prospect with Phillips Petroleum Company's Katherine Hutchins 5, coring gas sand at 6879-90 feet and oil sand at 6890-96 feet. It is being cored a little deeper preparatory to making a drill-stem test. The well is in the northwestern portion of a 60-acre lease in Shepherd Farm Lots Nos. 29 and 30, and is 10,800 feet northeast of Republic Natural Gas Company's J. K. Ordner 3, discovery well of this sand. The new well, if a producer, will extend production more than 2 miles to the northeast in this sand.

After perforating casing at 6742-46 feet with 10 shots, Bentex Oil Company is completing Frank Harmon 2, which will extend the 6700-foot sand another 1600 feet. The well is cleaning through ⅛-inch choke, showing considerable wash water and some oil under pressures of 750 and 975 pounds on tubing and casing, respectively. Several other outpost wells are coring or testing the 6700-foot sand to further widen the producing area.

Richardson Petroleum Company's Hoelscher 5, in the Clarkwood Sector of the field, widened the 4800-foot sand several locations after drilling to 4887 feet and being completed through perforations at 4868-70 feet. It has been turned into tanks, but has not yet been gauged.

Extension in New Sand

Invincible Oil Company's (Lockhart Brothers) Mable Eliff 1, in A. Longoria Survey, 1 mile southwest of the South Agua Dulce field, also Nueces County, has been completed through perforations at 6410-20 feet, extending the field and opening a new producing horizon. The test is reported to be flowing between 3 and 5 barrels of distillate per hour with a large volume of gas through ⅛-inch choke and showing pressures of 2300 pounds on tubing and casing. It had been drilled to 6912 feet, but failed to develop production in the lower sands.

Stanolind Oil & Gas Company apparently was opening a new producing sand one mile west of the Bentonville-King field, Jim Wells County, when it set casing to perforate in a 4600-foot sand. The well, located in the Abajo Grant, drilled to 5835 feet without encountering production in the regular deep sands of the field. Same company's Pope 2, north offset to the deep discovery, drilled to 5693 feet, set casing at 5688 feet and is perforating in sand topped at 5658 feet, which showed both oil and gas. This will be the second producer to the new deep horizon.

Jim Wells Drilling in Prospect

A heavy drilling campaign is in prospect for the new west extension to the Premont field, also in Jim Wells County, where sands at 2250 and 2350 feet are providing flowing wells. Already a twin-well campaign has been commenced to expand the work of regular offsetting in the shallow pool.

Barnsdall Oil Company's Kate Edwards 1-A, 660 feet southwest of the first test on the Lamar prospect, Aransas County, is drilling near 4,000 feet. It will test the showings encountered in the preceding test, which stuck drill stem at 7997 feet and flowed some oil and gas after blowing out from this level.

Jackson County Revival

Jackson County, dormant for more than a year, again springs into the limelight with three new operations

80 Acres of Mud

Since last November, Texon Drilling Company's 2, in the South Agua Dulce field, South Texas, has been burning and blowing mud and water. The burning crater in the center of the picture is the original well. The white area (covering nearly 80 acres) is mud, water and slush held in check by six-foot dykes. It is evident where overflows have necessitated the building of additional levies. To the left of the burning crater is a second crater, which is showing gas but not burning. A third crater is located at the upper end of the white area, being about 1200 feet distant from the original blowout and is all that remains of Texon Drilling Company's Mable Eliff 1. The derrick shown in the larger photograph is a directional hole being drilled in an effort to cut off the flow. Both photographs were taken from an altitude of 1500 feet by "Doc" McGregor of Corpus Christi.

being announced and several more expected to follow shortly. A leasing campaign is now underway by the majority of major companies and several large independents, fancy bonuses being reported for commercial leases. Considerable geophysical work, of various types is underway at this time. Shell Petroleum Corporation has commenced another test on the Mauritz land in the Mauritz field, while The Texas Company has started a well on the same land, but five miles southeast of Ganado. Steinberger Petroleum Corporation and Chicago Gulf Oil Corporation has resumed work on the Edna prospect.

Magnolia Petroleum Company has encountered a series of sands carrying both oil and gas from 2362 feet to its total depth just below 3,000 feet in Annie B. Wagoner 1, on the Telferner prospect in Victoria County. The well, however, is being cored ahead. It is 660 feet south of Willie Beck 1, discovery gasser in this field. The well is looked upon as an unusually important test.

Shell Petroleum Corporation was attempting to extend the Placedo field, Victoria County ¾-mile to the southwest with Houston National Bank 1, Section 7. The well topped sand at 4638 feet and cored 127 feet of broken material to 4765 feet. Four drill-stem tests failed, but another was being attempted.

Paul Meaders' Temple Lumber Company 1, 2 miles southwest of Austwell, Refugio County, is preparing to abandon after drilling to 6760 feet and running electric formation tester.

Plymouth Oil Company's E. H. Welder 65-C, deep test in the Plymouth field, San Patricio County, has been delayed by a fishing job. Drill stem stuck at 6900 feet and efforts are not being made to recover it.

TEXAS HEARING

Austin.—The Texas Railroad Commission has anounced that the monthly proration hearing will be held in Austin on March 19.

FOUR DISCOVERIES

McMullen, Duval, Webb strikes not important

Laredo.—Four new Mirando discoveries, none likely of major importance, were reported during the past week, the largest number for a like period in several months. Two are in McMullen County, one in Duval and the other in Webb County.

Argo Royalty Company and John Clopton pumped 130 barrels of fluid from Smith Corkill 2, two miles south of the Hoffman field, Duval County, on a 24-hour test to open a new pool. The fluid was about 75 percent salt water and the remainder 27.1 gravity oil. The test, located in the west corner of the E¼ of E¼ Section 498, is producing from casing perforations at 2672-75 feet, the sand being logged at 2670-88 feet. Elevation is 682 feet. The formation is just above the upper Government Wells and likely a stray sand. Lower Government Wells at 2775-80

feet failed to develop production. The discovery of production in this horizon, while not satisfactory in this well, is of great importance as it may lead to further exploration in the area.

Webb County Strike

Another new strike in the making is O. W. Killam's A. M. Bruni 49, Block 36, Share 8, Foltz subdivision, immediately south of the Bruni townsite production in the Cole field, Webb County. The well cored good oil sand at 2953-58 feet, set casing at 2953 feet and swabbed dry. It is being reworked. On a drill-stem test, the test showed 65 feet of 41 gravity oil and nice pressure through ¼ and ⅜-inch chokes. The well previously had shown gas in the O'Hern sand at 2802 feet. This horizon likely is about 150 feet below the O'Hern level and in the Yegua formation. Several wells are producing gas from this level in the Bruni townsite area, but this is the first to show for an oil well.

Windsor Oil Company and Mills Bennett's W. R. Peters 1, ½-mile southwest of production in the Peters field, Duval County, is being completed as an oil producer in the Mirando sand at 2651-53 feet, where casing was perforated. The well, located in Section 33, originally was completed at 2248 feet, but deepened to 2655 feet, finding sand at 2648-58 feet.

McMullen Gas Well

Edwin M. Jones' Harry Ezzell 1, Section 3, Adams Survey, 5 miles northwest of Simmons City in McMullen County, has been completed as a gasser in the Government Wells sand to open a new field. The well drilled to 1285 feet, topping the Mirando sand, Where it showed salt water. Seven-inch casing was cemented at 1275 feet and perforated in sand topped at 1281 feet. It was making a little water and likely would be recompleted after casing was cemented again.

A new shallow pool on the McMullen-Live Oak County line was considered to have been discovered when Loma Oil Company's L. Jacob Corporation 2-B, cored good oil sand at 1067-74 feet and set casing at 1062 feet. The test was bailing some oil at last reports and looks like it will open a new pool one mile north of the present Jacob field. The new well is in GH&H Ry Survey No. 15 and is 1300 feet northwest of No. 1-B, which showed some oil in this sand.

BROOKS COUNTY

Mission.—The Standard Oil Company of Texas plans immediate development of its Alta Mesa field in southwestern Brooks County, where several shallow sands have been uncovered. Mestina Oil & Gas Company 2, Lease 1, in Tract 3, Salinas Survey, has been completed for 220 barrels of oil per day through ⅜-inch choke under a pressure of 245 pounds. The well topped sand at 2446 feet, set casing at 2442 feet and drilled to 2470 feet. No. 3 well, same lease, flowed approximately 200 barrels per day through ⅜-inch choke under 250 pounds pressure. It topped the sand at 2448 feet and drilled to 2470 feet. Locations have been made and work is being started on two wells on the B. Garcia land within the proven sector of the field.

The same company has made a location and is moving in materials for a deep test to be drilled 6 miles north of the field on a separate prospect. The new well will be Mestina Oil & Gas Company 1 on Lease 3, in B. Garcia Tract 11, R. G. Salinas Survey.

Two deep wells are drilling in the La Blanca-Mestina district of eastern Hidalgo County. Sterling Oil & Refining Company's J. C. Engelman 1, is making hole considerably below 6300 feet, while Gulf States Oil Company's Engelman 3 is drilling at 8160 feet. It ran an electric formation tester at 7990 feet, after deepening from 6812 feet, its former completion level. Northeast of these wells and in the La Sal Viejo field, Willacy County, Shell Petroleum Corporation et al's Yturria 1 is drilling at 7705 feet. It was completed several months ago at 7667 feet to open the deepest field in South Texas, at that time, but is being deepened to 9200 feet.

Balcones Hot Spot

EXTENSIONS AND DEEP TEST KEEP NEW INTEREST REVIVED

San Antonio.—Completion of a large producer in the Branyon field, Caldwell County, showings in several key wildcats, together with an increased exploratory campaign, again places the Balcones Fault zone sector of South Texas into the limelight as a potential hot spot.

The comeback of the particular district has been constant during the past year and now the interest centers around two types of development, one shallow Austin chalk and the other deep Trinity sand.

Colby Oil & Gas Company's W. W. McCrory 2, John Neil Survey, northeast side of the Branyon field and between that area and the Buchanan pool, Caldwell County, flowed 180 barrels per hour on an official gauge. It topped the Austin chalk at 1995 feet, drilled to 2084 feet, losing returns at 2065 feet, apparently a crevice. Several unusually large producers have been drilled in crevices in this field, the majority ranging from 15 to 150 barrels per day from broken chalk.

Deep Test Underway

Probably the most important well in this sector of the Balcones Fault zone at this time is Diamond Half Oil Company's 5500-foot Trinity sand test on the west side of the Darst Creek field, Guadalupe County. The well, located in the 666.6-acre E. Bibbs et al lease, is drilling at a shallow depth at this time, but likely will make rapid progress in drilling the limes to the Trinity horizon. It expects to encounter the Edwards lime on the downthrown side of the main fault and cut that horizon somewhere in the lime, throwing it on the high side before the Trinity is reached.

Austin Chalk Extensions

Two extensions were provided to Austin chalk fields in Guadalupe County during the week, while several more wildcats apparently were opening new producing areas. W. J. Walton's Martin Hoffman 1, 1 mile northeast Zoboroski field, is plugging back to cut off water. It is an old abandoned well in the Edwards lime which originally stopped at 2665 feet. The base of the Austin chalk is 2545 feet and attempts at completion are being effected above this level. From present indications, this well will make a producer to extend that field. Saxet Production Company's Robert Inman 1, southwest of the South Darst Creek field, topped the chalk at 2402 feet, drilling to 2505 feet and is flowing 100 barrels of oil per day by heads.

Nick Marosis et al's Maierhofer 1, in the L. A. Peters survey, 8 miles southwest of Seguin, Guadalupe County, failed to make a producer in the Edwards lime at 2175 feet and is completing as a gasser in the Navarro sand at 780 feet. It opens a new shallow pool. Petor Oil Company's Priestly 1, Williams survey, in the Salmar Sector, is drilling plugs and testing after finding saturation in the Austin chalk at 2000-9 feet. J. B. Stoddard et al's Harris 1, Dewitt survey, same area, encountered tough luck in losing bailer while trying to remove acid at 2141 feet. It looks like some sort of well, but may be ruined as a result of the acid being on the formation a number of days.

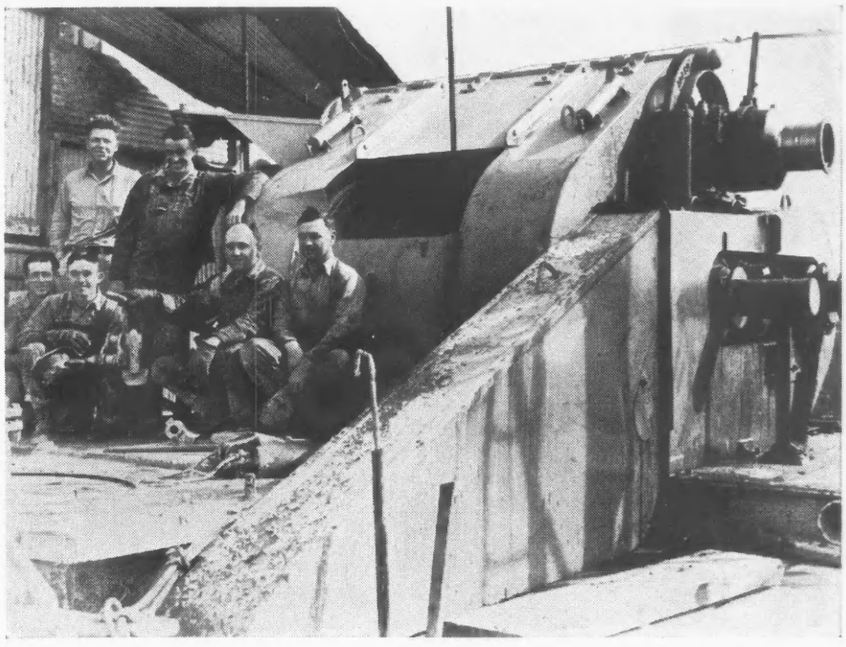
Frontier Oil Company's D. and A. Oppenheimer, J. Sharp survey, 6 miles south of Lytle and southwest of the Somerset field, Atascosa County, is preparing to acidize in the Taylor marl and Austin chalk in an effort to make a commercial well. The well drilled to 2770 feet, in the Edwards lime, where it showed a little black oil and sulphur water. It plugged back to 2667 feet and is pumping about three barrels of oil per day from 1665-2667 feet.

Amerada Petroleum Corporation's 10,000-foot test on the Halff and Oppenheimer Ranch in the Pearsall field, Frio County, was progressing below 7,000 feet in lime, expecting to go into the Glen Rose within a few feet.

James E. Pederson's Turner 1, Hudson survey, 1½ miles southeast of Tanglewood in Lee County, is still swabbing at 6061 feet in sidetracked hole, showing some oil from the Buda lime. The well originally drilled to 6560 feet, but sidetracked to recore the oil shows. Casing is set at 6010 feet.

SOUTH TEXAS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
LAREDO DISTRICT		
DUVAL COUNTY—		
Bridwell Oil Co., E. Robles 5-A, sur 68 (Hoffman)	275	2705
Gorman Yoakam, O. W. Greene 1 (Hoffman), sur 118	320	2706
A. J. Brinkoiter, State 3, sur 215 (Seven Sisters)	*	2700
N. V. Duncan, Worden & Drought 4, sur 151 (Charamousca)	240	1568
Humble, E. J. Arnsteine 3, sur 130 M. Rogers (Sarnosa)	175	2426
G. Ruiz Est. 22, sur 553 (Loma Novia)	196	2753
G. Ruiz Est. 23, sur 553 (Loma Novia)	200	2780
Magnolia, DCRC 11, sec 100 (Piedra Lumbre)	85	1963
C. W. Hahl 57, sur 67 (Loma Novia)	¶2	2745
McKay and Reed, Lundell 14, sec 60 (Gov't Wells)	102	2282
Mortimer & Springer, J. B. Peal 22-B, sur 796 (Lopez)	650	2183
J. B. Peal 23-B, sur 796 (Lopez)	650	2168
Plymouth Oil Co., Hoffman, sec 117, BS&F sur (Hoffman)	18	2826
Russ Pet. Co. et al, Hahl 8-D, sec 64 (Loma Novia)	96	2520
S. W. Prod. Co., C. W. Hahl 2, sur 64 (Loma Novia)	85	2549
Smith & Hamill, G. Ruiz Est. 3, sur 41 (Loma Novia)	40	2593
JIM HOGG COUNTY—		
Randado Oil Corp., Carlos Palacios 37, sur 291 (Randado)	*	1287
McMULLEN CONUTY—		
E. M. Jones, Harry Ezzell 1, 160-ac tr, sec 3 Ezzell Ranch sub, Thos. Adams sur	¶20	1285
WEBB COUNTY—		
Smith & Hamill, S. Benavides 20, Mirando Arispe Grant, blk 506 (Cole-O'Hearn)	250	2945
S. Benavides 33, blk 451, Mariano Grant	350	2936
S. Beanvides 34 (Cole-O'Hern) Mariano Arispe Grant	550	2940
Sun, Benavides 4-A (Cole) Mariano Arispe Grant	175	2951
Benavides (Cole-O'Hern) blk 508 Mariano Arispe Grant	275	2950
ZAPATA COUNTY—		
Glenn Herroun, M. Garza Est. 5, blk 10, Comitas gr (Escobas)	90	1404
B. W. Roscoe, C. Bustamante 18, Comitas gr (Escobas)	60	1184
Zapata Corp., M. Garza Est. 7, Comitas Grant Zorro Ranch (Escobas)	33	1156
M. Garza Est. 11, Comitas Grant (Escobas)	50	1170
CORPUS CHRISTI DISTRICT		
ARANSAS COUNTY—		
Atlantic, McCampbell Ranch 3-C, blk 39, McCampbell sub (McCampbell) perf 6540-44	400	6551
Buckingham & Jones, McCampbell Ranch 1-B, Lots 13 and 14, blk 40, McCampbell sub (McCampbell)	300	6556
BEE COUNTY—		
Illinois Pet. Co., A. Hartzendorf 1, center lot 6, A. Hartzendorf sub, G. A. Kerr sur	*	3909
BROOKS COUNTY—		
Standard Oil Co. of Texas, Mestina 2 (lease 1) R. G. Salinas sur (Alta Mesa)	500	2470
Mestina O&G Co. 3 (Lease 1), R. G. Salinas sur (Alta Mesa)	425	2470
CALHOUN COUNTY—		
Portilla Dr. Co., P. H. Welder 5-C, A. Sisneros sur (Heyser)	550	5476
HIDALGO COUNTY—		
Harrison-Danvers, F. B. Guerra 5-A, sh 251, por 38 (Samfordyce), perf 2813-34	500	2969
NUECES COUNTY—		
Conservative Oil Co., Rand Morgan 4-B, sec 403 (Saxet), perf 6745-50	150	6978
Crown Central, Rand Morgan 5-A, sec 592-315 (Saxet)	475	4460
Humble-Barnsdall, Jose Miller 1-B, lot 5, sec 48, Flour Bluff and Encinal Gardens (Flour Bluff)	650	6664
A. A. Webster et al 2, lot 25, sec 48, Flour Bluff and Encinal Gardens (Flour Bluff)	650	6658
Invincible Oil Co. (Lockhart Bros.), Mable Eliff 1, 4501 ft el, 466 ft sl 3054.9-ac tr, A. Longoria sur, 1 mi sw S. Agua Dulce, perf 6410-20	¶ & 100	6912
Republic Nat. Gas, John Dunn 17, blk 37 (Saxet)	500	4862



The photograph above, showing a drilling crew operating in the Clarkwood extension of the Saxet field in Nueces County, Texas, on a rig owned by Howell, Abbott & Traxler, was sent us by J. C. Colby of The International Derrick & Equipment Company. The well was at a depth of 7,000 feet when photograph was taken. Standing, left to right: Paul Johnson, J. C. Abbott, driller. Kneeling, left to right: Fred Nash, Venson McArthur, Cone Stringer and Carl Johnson.

Company, Well and Location	Init. Prod. Bbls.	Depth
REFUGIO COUNTY—		
Illinois Pet. Co., Wilson Heard 1, M. J. Ximines sur (Greta-Tomoconnor) perf 5838-50	1250	5909
Quintana Pet. Co., Clement Heard 3, M. J. Ximines sur (Tomoconnor)	1000	5929
Tom O'Connor 11-C, blk 39 (Tomoconnor)	2500	5920
United Prod. Co., F. M. Lambert 33, blk 26 (Greta), perf 2105-15	¶1¼	5947
M. F. Lambert 37, blk 35 (Tomoconnor)	750	5900
SAN PATRICIO COUNTY—		
Eaves Oil Co., J. L. Britton 4, blk 8, sec 6, (Taft)	450	4020
Humble, J. W. Mayo 18, Ottman sur (Taft)	600	4926
SAN ANTONIO DISTRICT		
ATASCOSA COUNTY—		
L. G. Priest, Trustee, John Sanders 1, 600 ft nl, 150 ft wl 117.61-ac tr, lot 44, J. P. Gorman sur 1189	*	3000
BASTROP COUNTY—		
Nelson Puett, D. B. Lentz 1, Jacob B. Lentz sur (Caroll)	*	2407
BEXAR COUNTY—		
J. H. Devine et al, Joe Miholski 1, 570 ft el of 100-ac tr and 1171 ft sl of sur and tr, Jose Maria Bustillo sur	*	347
Roger Putnam, Simon and Anna Wetz 5, J. S. Simpson sur (Von Ormy)	1	562
CALDWELL COUNTY—		
F. J. Adams, W. M. Ellison 1-B, Dillard Cooper sur (Branyon)	85	2333
R. B. Byrd, W. A. Magee et al 1, John A. Neill league (Branyon)	*	2275
Colby O&G Co., W. W. McCrory 2, John Neil sur (Branyon)	3000	2084
Edwill Oil Co., B. F. McConnell 2, W. Spillers sur (Buchanan)	35	2270
Holes, Heibert & Brandish, W. F. Eiband 1, S. Seal sur, 440 ft el of 57-ac tr in 57-ac tr	*	2585
Mrs. E. B. Whittington et al, Sam McMahan 1, James Pinchback sur, 165 ft sl, 750 ft el, 1 mi sw Buchanan field	6	2060
R. Geo. Young, Tr., Lena Schmidt 1, 150 ft sl, 1265 ft el of W. C. Williams 1/3 league, 3 mi w Lockhart	*	1362
EDWARDS COUNTY—		
Plateau O&G Co., Mrs. R. L. Hatch 1, J. W. Joy sur, sec 66, HE&WT RR, blk D	*	5175
GUADALUPE COUNTY—		
Saxet Prod. Co., Robert Inman 1, Green De Witt sur (S. Darst Creek)	100	2505
MEDINA COUNTY—		
Ina O&R Co., Mrs. V. Wilson Durst sur (Ina)	8	892

*Failures; †Junked; Million cu. ft. gas.

BOOST PERMITS
All Texas areas show increased drilling work

Austin.—The Texas Railroad Commission last week approved permits for drilling 481 new wells in Texas; 292 more than were allowed the week before.

The Gulf Coast and South Texas listed 132 permits, with 49 in Nueces County and 14 in Harris County. Southwest Texas reported 78 locations, with 34 in Duval County.

There were 92 permits from West Texas, including 33 in Ector County, 15 in Ward Coutny, 14 in Upton County, and 13 in Winkler County. Panhandle operators listed 8 locations.

There were 52 permits for wells in East Texas field, including 24 in Gregg County, 18 in Rusk County, 7 in Upshur County, and 3 in Smith County. East Central Texas reports 29 locations, including 11 in Hopkins.

There were 80 permits from North Texas, with 28 in Young County, 27 in Jack County, and 20 in Archer County. West Central Texas reported 10 permits.

Austin.—The House last week passed a bill by Representative Roy Tennant providing for inspection of oil field boilers. The bill is intended to provide for safer operation.

Second Deepest

OLD OCEAN TEST PRODUCES OIL FROM 10,293 FEET

WEEKLY STAFF REPORT

Houston.—The second deepest commercial producing oil well in the world was completed by Harrison & Abercrombie at Old Ocean field, Brazoria County, last week when Bernard River Land & Development Company 3, C. Breen Survey, came in making an estimated 13 barrels of 52 gravity oil per hour through a quarter-inch choke from Frio formation at 10,293 feet.

The operators were still testing the deep well at the close of the week. Pressures had increased from 2700 pounds to 3800 pounds, and connections were freezing. The 3800-pound pressure reading is the second greatest pressure show on any well. It is exceeded only by Stanolind Oil & Gas Company's discovery well at Clinton, Harris County, which showed a pressure of 5100 pounds.

Bernard River Land & Development Company 3 was drilled to 10,437 feet, and 50 feet of screen was set from 10,263 to 10,293 feet. Seven-inch casing, cemented at 10,004 feet, is one of the longest strings of casing ever set in the Texas Gulf Coast.

Discovers Third Oil Sand

Harrison and Abercrombie's well, 1970 feet north of Bernard River Land & Development Company 2, also discovered the third producing sand at Old Ocean. At three different times this field has held the honor of being the deepest producing district in the Gulf Coast only to have this honor taken away by another district bringing in deeper production. The three producing depths are, 8634 feet, 9963 feet and 10,293 feet. It exceeds the deepest producing district, Lafitte field, Jefferson Parish, Louisiana Gulf Coast, only by 49 feet. The latter deep field is producing from 10,244 feet. It is exceeded only as the deepest commercial producer in the world by Tide Water Associated Oil Company's well at Ventura Avenue field, California, which is producing from below 10,500 feet.

The deep well is the second 10,000-foot hole for the Texas Gulf Coast and needed only 23 more feet to have established a new deep drililng record in the Texas Gulf Coast. Shell Petroleum Corporation's Maco Stewart 1, Hitchcock prospect, J. Spillman Survey, Galveston County, is the deepest, having penetrated formations to 10,460 feet, where it tried to blow out.

Cement 10,004 Feet of Casing

Harrison & Abercrombie's Bernard River Land & Development Company 3 was spudded in the latter part of 1936, and 10-inch casing was set at 40 feet, 13-inch at 1268 feet and 9-inch at 6070 feet. Coring was commenced above 8500 feet, and sands and shales with odors of oil were encountered from 8500 to 8900 feet. Cores from 9778 to 9933 feet showed from three to 10 ohms and from 20 to 40 milivolts on an electrical logging device. From 9994 to 10,414 feet sands with streaks of shale was cored which had odors of oil. Seven-inch casing was cemented at 10,004 feet and around 250 feet of blank screen was set down to 10,263 feet. Then 50 feet of slotted screen was set from there to 10,293 feet, and 2½-inch tubing hung in the hole.

South Bay City Field Extended

It was indicated last week that the second oil producer would be completed at South Bay City field, Matagorda County, and extend the producing limits of the area approximately 2400 feet north. Hammond Exploration Company's J. Croker 1, E. Hall Survey, was making an estimated 650 barrels of 37 gravity oil daily through the drill stem and showing a working pressure of 300 pounds after perforating casing with 19 holes from 8190 to 8194 feet in Frio formation. The operators will let the well flow through the drill stem for a while to see if salt water comes in. If not, the drill stem will be pulled and a complete setting made.

This production test, from 8190 to 8194 feet, is the fifteenth test to be made on Croker 1. All other tests have shown salt water. The hole was drilled and cored to 9575 feet and seven-inch casing was cemented on bottom. The first test was made from 9505 to 9550 feet and showed water. The casing was perforated up the hole at different intervals to 8190 feet.

Croker 1 also opens up a new producing horizon for the field. The discovery well was completed in sands from 9361½ to 9370 feet.

TEXAS GULF COAST
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ANAHUAC—		
Humble, Engles 8	384	7076
Sun, M. White 2	*	2274
CONROE—		
Houston Oil Co., Cartwright 13	432	5155
Normandie Oil Co., Koonce 1	490	5147
Strake Pet., Krohn 7	525	5130
CLAY CREEK—		
Sun, Schlottman 7	*	2080
GOOSE CREEK—		
Gulf, Wright A-25	15	1480
HASTINGS—		
Humble, Hildale 2	724	6080
Stanolind, Brown 2	601	6080
MANVEL—		
Texas Co., Houston Oil Field Association 5	611	5651
NOME—		
Shell, Carpenter 4	320	6055
PIERCE JUNCTION—		
Rio Bravo Oil Co., Hooks 1	375	3770
RACCOON BEND—		
Humble, Grawunder 7-X	*	4160
SILSBEE—		
Republic Production Co., Brooks 7	¶1	6897
SOUTH COTTON LAKE—		
Salt Dome Oil Corp., A. Lawrence 1-B	53	6499
TOMBALL—		
Humble, Martins 2	408	5559
Texas Co., Zeigler 4	500	5581
COLORADO COUNTY—		
Edens Oil Co., Wells 1, w of Eagle Lake, Osborne sur	*	5805
MATAGORDA COUNTY—		
Strake Pet. Corp., Sargent 1, Poole Ranch prospect, L. E. Parker sur	*	9503
WALKER COUNTY—		
Roswell Oil Co., Osborne 1, sw of Huntsville, J. Jordan sur	*	267

*Failures; †Junked; Million cu. ft. gas.

Palacious Wildcat Holds Attention

Glenn H. McCarthy's Foley Land 1, Palacious prospect, L. Goodwin Survey, Matagorda County, was attracting considerable attention. All information is being withheld by the operators, but the last report obtainable was that the crew was circulating at 8235 feet. It is understood that there is no open acreage in the area, and prices for royalty and some acreage have been bringing from $150 to $300 per acre. A large amount of acreage is in escrow at Palacious awaiting the outcome of the wildcat. It is believed that the wildcat will be tested in the next few days. It is reported that a large amount of the operator's leases which were in escrow have been purchased and now a matter of records in the court house. Rumors have been current that Foley Land 1 had a showing of oil around 7800 feet, oil sands from six-inches to 45 feet in thickness, but this could not be confirmed.

Ohio Oil Company abandoned Saint 1, Pledger area, D. McNeil Survey, Brazoria County, last week at 6952 feet after coring salt water sands. Sands were cored from 4846 to 4859 feet and from 6876 to 6935 feet.

The second wildcat abandoned at Poole Ranch prospect, Matagorda County, was Strake Petroleum Corporation's Sargent 1, L. E. Parker Survey, drilled to 9503 feet. A string of 9⅝-inch casing was cemented at 6751 feet.

Big Hill May Produce Oil

The Big Hill area of Jefferson County may produce oil. At the end of the week Stanolind Oil & Gas Company was pulling screen on Fitzhugh 1, Wm. McFaddin Survey, at 4927 feet. The hole was drilled down to 4927 feet in shale with sand showing oil from 4913 to 4919 feet. Seven-inch casing was cemented at 4913 feet. The swab was run in 1600 feet off bottom and the well showed some 35 gravity oil and no pressure. Another production test will be made.

On the southwest side of Amelia field, Jefferson County, Humble Oil & Refining Company was preparing to complete T. H. Crook 1, C. Williams Survey. The hole was drilled to 6781 feet in sand showing oil after logging the top of the sand around 6731 feet. Seven-inch casing will be set on bottom and perforated. Humble Oil & Refining Company has started on an extensive drilling program at Amelia and will probably drill most of the field up during 1937. Seven new locations were

announced on the west and southwest side of the field near the town of Amelia.

Humble Oil & Refining Company's Jefferson Land Company 1, Cheek area, C. Hillibrandt Survey, Jefferson County, was circulating at 8458 feet in sand and had a stuck drill stem. The operators will probably plug the hole back to around 8100 feet.

Another Producer at Nome

Another producer was completed at Nome field, Jefferson County, by Shell Petroleum Corporation. Carpenter 4, M. Peveto Survey, made 320 barrels of oil daily through a quarter-inch choke with a tubing pressure of 1365 pounds and a casing pressure of 1700 pounds from sands at 6055 feet. Location has been made for Carpenter 5, 1300 feet from the west line and 466 feet from the north line of lease in M. Peveto Survey.

Silsbee Wells Test Sand

Republic Production Company has two wells in the Hardin County field of Silsbee approaching the Lower Cockfield sands and will make drill stem tests before making production tests. Brooks 6, G. W. Brooks Survey, was coring sand with odor of oil at 6866 feet at the end of the week. An eight minute drill stem test from 6852 to 6865 feet showed a 210-pound pressure and three joints of mud through quarter-inch chokes. Brooks 8, G. W. Brooks Survey, was coring sand with an odor of oil at 6937 feet. Sand showing oil was encountered from 6808 to 6815 feet, and the operators did not make a drill stem test of this formation. Brooks 7, 3100 feet northeast of production, which came in the past week making gas and distillate has not been gauged. The well is flowing through a 3/16-inch choke, with a tubing pressure of 1950 pounds and a casing pressure of 2050 pounds.

Another Record

WHEN Harrison and Abercrombie of Houston completed Bernard River Land Development Company 3 as a commercial producer at 10,263-93 feet, the well obtained as many titles as Jesse Owens won during the last Olympic meet. It is the second deepest producing well in the world, the deepest outside of California, the fourth 10,000-foot commercial well, and has the highest continuous pressure in the world. Besides it is the discovery well of the third and deepest producing horizon in the Old Ocean field, Brazoria County, Texas Gulf Coast. The well is estimated flowing 13 barrels hourly through a quarter-inch choke with a pressure of 3800 pounds.

Two New Wildcats

Two new wildcat locations were announced on the Texas Gulf Coast during the past week. N. Blumenthal made location for A. Kelly 1, northeast of Hempstead, 330 feet out of the south corner of a 32-acre tract in the S. Hardin Survey. J. F. Hutchins announced location south of Wharton for J. J. Wensley 1, 350 feet southwest along the southeast line from east corner of survey and 250 feet northwest at right angles in the J. Tumlinson Survey, Wharton County. Peyton Brothers made location for a well at Ace in Polk County. Doucett 1 is 330 feet north of the south line and 330 feet east of the west line of a 158-acre tract in the P. Sublett Survey.

Northwest of production at Anahuac field, Chambers County, Humble Oil & Refining Company was preparing to set casing on White 11-B, J. McGahey Survey, at 7137 feet after topping sand at 7127 feet. Sun Oil Company has abandoned M. White 2, west of production at Anahuac, J. McGahey Survey, at 7274 feet after testing salt water in the Marginulina sands.

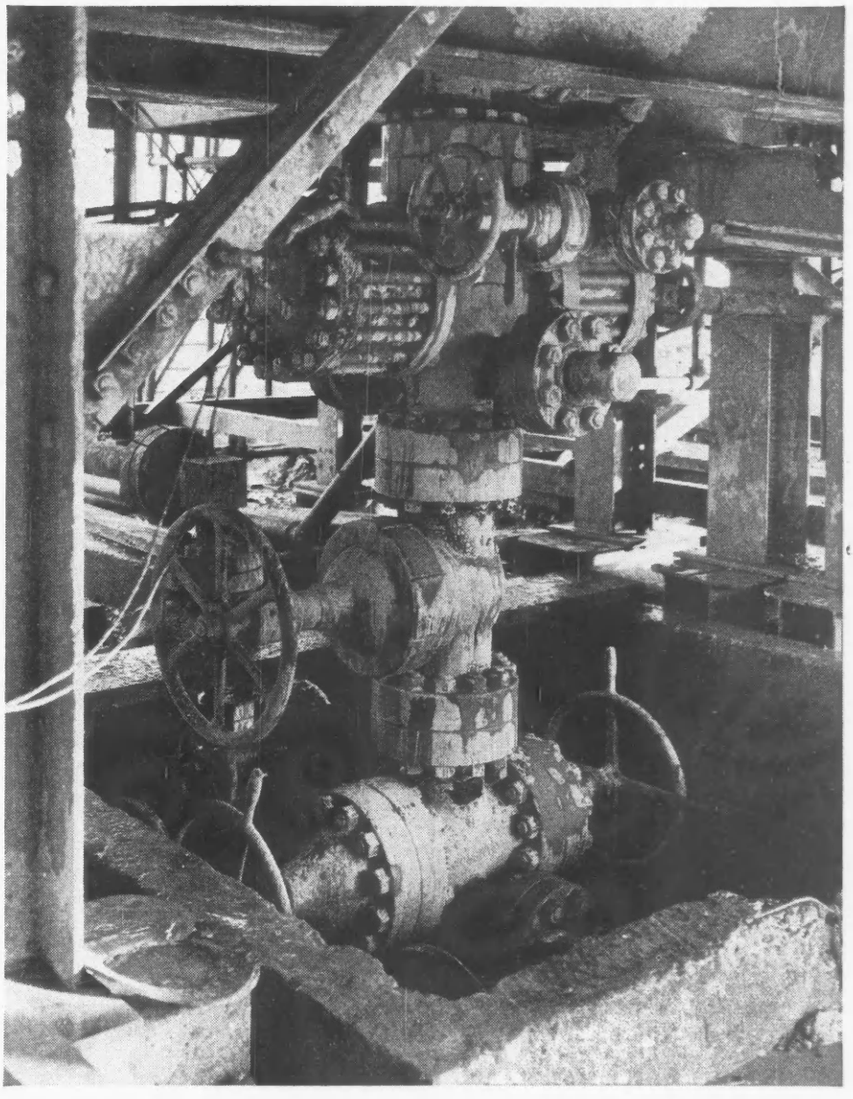
Salt Dome Corporation's Lawrence 1-B, South Cotton Lake area, S. Barrow Survey, Chambers County, has been completed making 52 barrels of 42 gravity oil daily through a 3/16-inch choke with a tubing pressure of 2400 pounds and a casing pressure of 2100 pounds at 6499 feet.

Sun Oil Company's Craig 2, 664 feet southwest of the discovery well at Hawkinsville, J. Williams Survey, Matagorda County, showed oil while swabbing and was making around 25 barrels per day from Miocene sands at 3775 feet. At the end of the week the operators were still swabbing Craig 2. No pressure was shown on the well. A string of five-inch casing was cemented at 3775 feet. This is a shallower sand than that found in the discovery well.

On the northwest side of Hastings field, Brazoria County, South Gulf Oil Company was completing L. M. Gann 1, H. & T. B. Survey, Section 29, at 6080 feet in the regular pay horizon. Oil sand was topped at 5634 feet. Humble Oil & Refining Company completed Holidale 2 on the northeast side of Hastings flowing 26 barrels of pipe line oil daily through a quarter-inch choke from sands at 6080 feet.

Austin.—The Texas Railroad Commission has issued an order providing for a gas-oil ratio survey of each well in the Rodessa field, Cass County. Operators are to file each month at Kilgore a report of the gas-oil ratio for each well.

Second Deepest Oil Producer



Strike Possible

LAKE PEIGNEUR WILDCAT MAY RENEW TEST

Lake Charles.—If Jefferson Lake Oil Company's Lake Peigneur 414, Jefferson Island Salt dome (Lake Peigneur), 12s-5e, Iberia Parish, produces oil in commercial quantities from the Oligocene formation, as it has indicated it would, the wildcat will be the forerunner to drilling on four salt domes located in Iberia and St. Mary Parishes, which heretofore were thought unproductive.

Jefferson Lake Oil Company's Lake Peigneur 414 is bottomed in oil sand at 6945 feet, after logging the top of saturated sand at 6930 feet. Seven-inch casing has been cemented on bottom, and after a new special logging device has been run in the hole the casing will be perforated next to the producing sand.

Found Below Salt Water

Lake Peigneur 414 was spudded in December, 1936, and encountered salt at 990 feet, where 13⅜-inch casing was set. At 5000 feet the crew drilled out of salt and drilled down to 6514 feet, where salt was again encountered. The bit stayed in this formation down to 6585 feet. The last 75 feet of the core from 6500 to 6585 feet showed oil in the sand and salt formation. Also a sand and pyrite was found from 6375 to 6430 feet which had a good cut of oil. A gas and oil odor was found from 6840 to 6865 feet after the crew had drilled out of salt the second time. Oligocene formation was reported at 6840 feet. But from 6871 to 6889 feet salt water sand was encountered. The hole was carried down to 6945 feet where 15 feet of oil sand was cored.

A few geologists have maintained that these five piercement type salt domes would not produce oil because the domes have pushed up the sands to the surface and the oil wasted and migrated away, or lost. This theory does apply to the Miocene sands, but the Oligocene sands were still untested. For this reason and because of lease conditions these domes were not explored for oil until about three or four years ago.

Five Domes Involved

Jefferson Island dome, Avery Island and Weeks Island, all in Iberia Parish, and Cote Blanche and Belle Isle in St. Mary Parish, are the five salt domes which probably will be explored for oil. These old domes have been known for many years as the salt is found on the surface where it has broken through the earth's crust. This salt was mined during the Civil War. Before then the Indians got salt from the domes.

The five domes lay in a northwest, southeast line with a slight curvature at the lower Island which conforms to the coast line to a certain extent. Weeks Island dome has a number of gas seeps in the salt mines.

Jefferson Island dome is owned largely by Jefferson Lake Oil Company, Avery Island is controlled by Avery Salt Company. Weeks Island is partly under lease to Humble Oil & Refining Company and Sun Oil Company in fee. The top of Cote Blanche is under lease to the Caffey Estate, the east side to Louisiana Land & Exploration Company, and Humble Oil & Refining Company has considerable acreage in the bay. Belle Isle is leased mostly to Sun Oil Company.

Abbeville Test Swabs

Continental Oil Company's Hebert 1, Abbeville prospect, Section 20-12s-3e, Vermilion Parish, was swabbing down to 5500 feet at the close of the week and the fluid was not rising in the hole. The swab line will be lowered in an effort to get the wildcat to flow.

Tubing which was hung in the 12,216-foot hole became lodged a month ago, and after pulling all but 150 feet it lodged again. After cutting and pulling the string of pipe, cement was pumped in and casing was perforated at 10,374 feet. Operators are testing a small sand section which showed oil and gas while drilling to the bottom of the hole. Hebert 1 was the first well in the Louisiana Gulf Coast to go below 12,000 feet and is the deepest well in the district, also the second deepest well in the world. If the well does produce commercial oil at 10,374 feet it will be the second deepest producing well in the world.

Another Cocotriz Location

Since completing the discovery well at Bayou Cocotriz, Terrebonne Parish, last week, Shell Petroleum Corporation announced location for Pelican 1, 447 feet southwest along the west line of Section 18 and at right angles 425 feet from the southeast line of Section 35, being in Section 35-17s-15e. Shell Petroleum Corporation's Realty Operators 1-B, the discovery well which was completed in Miocene formation at 9493 feet, was making 838 barrels of pipe line oil per day through a quarter-inch choke with a tubing pressure of 1725 pounds and a casing pressure of 1860 pounds, along with 720,000 cubic feet of gas daily. The gas-oil ratio is 860 to 1. Shell Petroleum Corporation's Realty Operators 1-B was drilled on a second block of a 22,000-acre lease once held by Barnsdall Oil Company. The first block was drilled by Shell Petroleum Corporation which drilled Realty Operators 1 below 10,000 feet before it was abandoned. Oil from the discovery well is being barged out through Black Bayou to the operator's refinery at New Orleans.

Second Well at Valentine

Oil sand was cored in Pan American Production Company's Harange 2, 660 feet northwest of the discovery well at Valentine field, Section 8-17s-20e, Lafourche Parish, from 6928 to 6950 feet. At the end of the week the crew was preparing to make a drill stem test of the sand. If the well is a commercial producer it will be the second well completed in the field and a northwest extension.

In Iberia Parish and at Fausse Point, The Texas Company was still testing State Fausse Point 2, Section 35-11s-8e, at 6553 feet. During the past week the

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well was making heads of oil every 2½ hours at the rate of 16 barrels daily. Gas pressures are increasing and the wildcat was flowing 140,000 cubic feet of gas daily. Casing was perforated from 6303 to 6553 feet with 250 shots. It is thought the crew took in too much formation. Sands showing oil were cored from 6384 to 6430 feet.

Nearing 11,000 Feet

Probably the third 11,000-foot well for the Louisiana Gulf Coast will be The Texas Company's Bayou Sale 1, Wax Lake prospect, Section 40-17s-9e, St. Mary Parish. At the end of the week the well was drilling below 10,982 feet in shale. A string of 13⅜-inch casing was cemented at 1496 feet, and the crew has approximately 9486 feet of open hole. A record of over 10,000 feet of open hole was drilled in Stanolind Oil & Gas Company's Fred Stovall 1, south of Abbeville, Vermilion Parish. The well went to 12,128 feet before it was abandoned.

Teche Oil Company's Matilda Plantation 1, south offset to Herton Oil Company's State Bayou Teche 1, Section 70-13s-9e, Jeanerette field, St. Mary Parish, was abandoned last week when a drill stem test from 7253 to 7269 feet showed salt water. Prior to making the drill stem test an electrical logging device was run. Teche Oil Company made location for LeBourgeois 1, 364 feet east of Herton Oil Company's Barrilleaux 1 and 182 feet west of the west line of the Barrilleaux lease in Section 59-13s-9e, St. Mary Parish. Herton Oil Company also announced another location at Jeanerette field. Barrilleaux 2 is 600 feet west of Banta 7 and 460 feet northwest of Banta 4 in Section 59-13s-8e.

Superior Oil Producing Company's A. Savoy 2, Cankton field, Section 26-8s-3e, St. Landry Parish, was making nine barrels of oil and 3,000,000 cubic feet of gas daily through a 20/64-inch choke, with a tubing pressure of 2200 pounds after perforating casing again from 5799 to 5801 feet with five shots.

Fenton Area Location

In the Fenton area of Jefferson Davis Parish, Louisiana Crusaders Oil Company announced location for Isaac Langley et al, 1320 feet west and 330 feet south of the NEc SE Section 36-7s-5w. This wildcat is in the area where a number of wildcats have been drilled. J. K. Lewis drilled a well west of this location which went to 7905 feet before it was abandoned.

Amerada Petroleum Corporation and Stanolind Oil & Gas Company's Calcasieu National Bank 1, China area, Section 28-7s-3w, Jefferson Davis Parish, was still shut down at the end of the week at 9139 feet after blowing out. The crew was repairing the derrick before trying to clean out the hole and unlodge the drill stem.

In the northern portion of Gillis field, Calcasieu Parish, Union Sulphur Company's Barbee Estate 12, Section 1-9s-8w, blew out, caught fire and cratered last week at 9101 feet after a new sand had been logged. The derrick and equipment was lost in the crater.

In Cameron Parish, Magnolia Petroleum Company abandoned Grey 1, Johnson Bayou prospect, Section 8-15s-14w, after running an electrical logging device and a survey of the hole. The hole was considerably off vertical at 7421 feet.

More Extensions

FIVE MILES SOUTHWEST AT RODESSA; NORTH WELL GOOD

WEEKLY STAFF REPORT

Shreveport.—Arkansas-Louisiana Gas Company's W. S. Ford 1, Charles Grayson Survey, Marion County, Texas, 5 miles southwest of Rodessa Production Friday morning was swabbing estimated 10 barrels of oil per hour along with considerable wash water and showing an estimated 150,000 cubic feet of gas daily. Seven-inch casing set on bottom at 6351 feet, was perforated at the 6100-foot level where Gloyd saturation was logged.

Twenty-six shots were used in the perforation and swabbing began Wednesday with the fluid lowered to 2500 feet when the well shut down for the night. The fluid rose 400 feet in the hole overnight. Swabbing was resumed Thursday morning and later in the day first trace of oil and gas appeared. Swabbing continued late Thursday without noticeable increases in the oil and gas showing. There was still much drilling fluid in the hole.

Holcomb, Thomason and associates' Lizzie Henderson 1 continued to swab and flow intermittently during the week after casing was plugged following killing of a large gas flow that followed a second perforation of casing. Thursday the well was reported swabbing about 7 barrels of oil daily into storage. The belief exists that production in the Jefferson area will probably be confined to some 45 feet of the Gloyd.

A number of locations have been made in the Jefferson townsite and if permits are granted extensive townlot drilling there appears likely.

Expect Drilling Flurry

An area north of a supposed lateral fault two miles north of Rodessa is expected to get a flurry of drilling as a sequel to the successful completion during the last week of J. Edward Jones' Madie Sharpe B-1, SE NW 4-23n-16w, at 6045 feet, as a good oil well. The well was completed flowing 49 barrels per hour through ¾-inch tubing choke with tubing pressure 125 pounds and casing pressure 450 pounds.

Later on a 24-hour gauge through varied-sized chokes the well made 581 barrels. During this period it flowed 3 hours on 42/64-inch tubing choke; on 32/64-inch tubing choke for 11 hours and for 10 hours on 13/64-inch choke. Tubing pressure during the 24-hour period was 325 pounds and 950 pounds casing pressure.

Jones has announced offset locations for Madie Sharpe A-2 and A-3 and B-2, all in the same section.

The new well is producing from the newly-found Mitchell sand from 5980 to 6000 feet. Some geologists classify this sand as a "phase" of the Gloyd, the latter being topped in this well at 5934 feet.

Bellevue Deep Test

Credence was given last week to a report current for sometime that a deep test will be drilled in the shallow Bellevue field in township 19 north, range 11 west, Bossier Parish, highest geological point on the Sabine Uplift, by reports that Standard Oil Company of Louisiana is negotiating for purchase of the Bliss & Weatherbee holdings in that field, aggregating approximately 3,000 acres.

Bellevue, discovered in 1921, produces from the Nacatosh at depths varying from 275 to 450 feet and also has produced some gas on the southwest flank from the Glen Rose at 2200 feet. The area has been the scene of considerable geophysical activity since discovery of wet gas and oil in basal Glen Rose in Sligo in township 17 north, ranges 11 and 12 west. The greatest drawback toward a deep test in Bellevue is the fact that the structure is truncated as evidenced by a 5000-foot test drilled over a decade ago by Humble Oil & Refining Company.

In the newly discovered Lisbon field, Claiborne Parish, where 4 tests are now drilling, United Gas Public Service Company, which owns a 12,000-acre block 4 miles north of the discovery well, has

SOUTH LOUISIANA

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CAILLOU ISLAND—		
Texas Co., State 28	750	4548
State 33, perforated 3750-70 ft.	417	4830
GILLIS—		
Union Sulphur, Barbee 7, (wo), OTD 6749, pb 6432, perforated	115	6432
Mary McIver 1	¶1	5431
GUEYDAN—		
Pure, Mulvey 1, (wo), OTD 4004, dr 4370 ft, perforated 4166 ft.	216	4370
HACKBERRY—		
Superior, Hebert 1	*	6553
JEANERETTE—		
Teche Oil Co., Matilda Plantation 1.	*	7270
NEW IBERIA—		
Texas Co., Hanszen B-4	600	4755
Hebert 1	*	7354
SULPHUR—		
Union Sulphur, Fee 826, (wo), OTD 3763 ft., pb 3335 ft, dr 3430 ft.	530	3430
Fee 841	720	4644
CALCASIEU PARISH—		
W. Lahey et al., Bass 1, Nibletts Bluff prospect, 9-10s-12w	*	80
CAMERON PARISH—		
Magnolia, Grey 1, Johnson Bayou prospect, 8-15s-14w	*	7421
JEFFERSON DAVIS PARISH—		
J. L. Watkins, Fee 1, Hayes prospect, 16-11s-5w	*	Icn

*Failures; †Junked; ¶Million cu. ft. gas.

been renewing its leases and also adding some acreage around Section 23-21n-5w. J. A. Wilder leased NE NW 28-21n-5w, and T. L. James and Company leased SE NW 26-21n-5w.

In DeSoto Parish, Arkansas Fuel Oil Company is renewing its leases in township 12, range 15 west and Hunt Oil Company in this same parish has been leasing in Section 32-11n-12w.

In Franklin Parish, Shell Petroleum Corporation has leased approximately 1500 acres in townships 12 and 13 north, ranges 8 and 9 east. In this general area, Arkansas Fuel Oil Company continues its core drilling work on the large block of Sherrouse & Snyder. In Natchitoches Parish, H. O. Pardue and associates are assembling a block centering around Section 29-9n-8w, for a proposed 3500-foot test. Arkansas Fuel Oil Company has been leasing recently in townships 11 and 12 north, ranges 8, 9 and 10 west, Red River Parish, east of the Bull Bayou field.

NORTH LOUISIANA Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CADDO PARISH (Rodessa)—		
J. Edward Jones, Maidie Sharpe B-1, 4-20n-16w	580	6045
Potter & Jones, Phillips 2, 23-23n-16w	¶5 & 96	5955
NATCHITOCHES PARISH—		
Natchitoches Oil Co. (Ivan A. Allen), Henry Simpson 1, 12-7n-7w	†	2510
SABINE PARISH (Converse)—		
Blue Lake Oil Co., DeLaney 1, 31-9n-13w	*	2037
Posey Sisters Oil Co., A. J. Burkett 2, 10-9n-13w	*	3234
WEBSTER PARISH—		
Red Hawk Oil Co., Baker 2, 9-23n-9w	†	2805

*Failures; †Junked; Million cu. ft. gas.

LOUISIANA PERMITS

Shreveport.—Twenty drilling permits were authorized last week by the minerals division, Louisiana Conservation Commission, of which 9 were for North Louisiana and 11 for South Louisiana. The North Louisiana permits were divided among the following parishes: Caddo 6, including 1 in Rodessa; Red River 1; Sabine 1; Union 1. Those in South Louisiana were divided among the following parishes: Acadia 1, Ascension 1, Calcasieu 2, Cameron 2, St. Mary 3, Plaquemines 1, Terrebonne 1.

Shreveport.—Two new locations for outside tests in the northeast edge of the Rodessa field were made last week. Lion Oil Refining Company is moving in material for G. Holm 1, NW SE SE 9-23n-15w, and S. P. Borden and associates will drill Means 1, NE SE 9-23n-15w. These locations are in the vicinity of Red Iron Drilling Company's Means 1, SW NE 9-23n-15w, completed as a gas-distillate well at 6005 feet.

Under the provisions of the 40 acres secured by Borden and associates they will clean out and test Idessa Oil & Gas Company's (Borden and associates) Sumner 1, SW SW 10-23n-15w, drilled to 6200 feet, and which is said never to have been tested.

Shreveport.—Seaboard Oil Corporation's McGee 1, Section 3-16n-6w, Bienville Parish wildcat, that recently showed for a large gasser in the Travis Peak horizon when casing was perforated at the 7300- and 7400-foot levels, last week tested 2½ million cubic feet of gas in basal Glen Rose when casing was perforated at 6665 to 6695 with 49 shots, with a spray of distillate through ¼-inch tubing choke. Total depth is 8017 feet. Later the well showed 4 to 5 million feet daily through ½-inch choke with considerable wash water still appearing. There was a spray of distillate with the gas.

CORING OIL SAND

Hempstead County test has show in Paluxy

ARKANSAS WEEKLY STAFF REPORT

El Dorado, Ark.—Root Petroleum Company's Drake 1, SE NW 23-14-24, Hempstead County wildcat, was coring ahead below 2400 feet after logging Paluxy sand with a show of heavy oil from 2335 to 2348 feet; elevation is 311 feet.

E. H. Moore, Incorporated, of Ada, Oklahoma, is reported to have acquired an interest in blocks of acreage held in Bowie County, Texas, and in Miller County, Arkansas, in township 15, range 26, and in western LaFayette County, Arkansas, by Sutton and Hawkins. It is reported that 6,000-foot tests are planned on each of these blocks.

In Ouachita County, around the lone oil well in the shallow Camden field, in Section 25-13-18, R. L. Preveto of Tyler, Texas, recently bought 120 acres in Section 34-13-18. In the same county, Scheufert and associates are leasing around Section 13-14-19.

ARKANSAS PERMITS

El Dorado, Ark.—Three drilling permits were authorized last week by the Arkansas Board of Conservation, as follows:

Nevada County—G. H. Vaughn, Dallas, Texas, Christopher 1, located 330 feet north and east SWc SW SE 3-14-20; Berry Asphalt Company, Waterloo, Arkansas, Junie Haynie 2, located 330 feet south and west NEc SE SW 6-14-20.

Sevier County—C. J. Binkley, Lockesburg, Arkansas, Dierks Lumber & Coal Company 1, located 300 feet north and east SWc SE NE 14-10-29.

ARKANSAS Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
NEVADA COUNTY (Troy)—		
Benedum & Trees Oil Co., Grove 5, 10-14-20	300	2138

*Failures; †Junked; Million cu. ft. gas.

$118,900,000.00

Last year in Louisiana you fellows spent almost one hundred and nineteen million dollars with us (and others, darn it!) for oil development. We do not, at the moment, have the figures on Texas, but our Texas stores will tell you it was not small change. It's great to serve an industry like that! If any of you fellows are not getting what you want, let us know. Any PELCO customer will tell you we'll do something about it — have been doing something about it for more than 25 years.

PELICAN
WELL TOOL & SUPPLY COMPANY

SHREVEPORT, LOUISIANA

PELCO

Lake Charles—Houma—Converse
New Iberia—Rodessa—Monroe—Cotton
Valley—Turnertown—Greggton—Houston

Plug Wild Gasser

GARLAND FIELD TEST UNDER CONTROL AFTER LONG FIGHT

ROCKY MOUNTAIN FIELDS — WEEKLY STAFF REPORT

Casper, Wyo.—Another chapter was written to Wyoming drilling history this week with completion of one of the largest plugging operations on record: Stock Oil Company's Allen 1, SE NW 35-55n-97w, wild gas well in Garland field, Big Horn County, northern Wyoming.

Successful plugging of the wild gas well, which has been out of control since January 19, 1936, entailed use of 2100 sacks of weight material, 4000 sacks of cement and 2000 barrels of drilling mud which was forced into the hole by the combined use of two heavy duty mud hogs and four cement trucks.

Sealing the well prior to abandonment marked the end of one of the longest battles between drillers and a wild well in the history of Rocky Mountain oil development. The final phases of the struggle were reminiscent of a similar case which occurred in the Little Buffalo Basin in Fremont County in the fall of 1919. This latter well, Section 12-27n-95w, gauged 90,000,000 cubic feet of gas before blowing out and was out of control and ablaze from the early part of October, 1919 to January 1, 1920. The blaze was extinguished by blanketing out with steam and water and then blowing out the flame with dynamite. Gas flow was then shut in with a hinge gate. The gas flow in this well was from the Frontier sand at around 2,000 feet.

Relief Well Deepening for Oil

The relief well used in the subjugation of the wild gasser on Garland is being prepared for deepening to the Madison lime for black oil production. Allen 1-B is 190 feet northwest of the Stock Company's Allen 1. Operators are washing down to loosen frozen drill pipe at 3800 feet.

In Byron field, Big Horn County, northeast of the Garland field, the Ohio Oil Company's State 1, NEC 35-55n-97w, swabbed a nominal amount of oil and is waiting on acid. Producing horizon for the field is the Embar-Tensleep zone encountered at 5331-5418 feet. The company's Baker 2, SE NW 23-56n-97w, Byron, is waiting on cement to set around 10-inch casing at 2,383 feet.

Wyalta After Sundance Oil

In an attempt to develop production in the Sundance level in the Spindletop field, Natrona County, central Wyoming, the Wylata Oil Company, under the management of George Jarvis, is carrying on an active drilling campaign in the SW SW 32-30n-81w and NW NW 5-29n-81w. A test of the Embar and Tensleep horizons in the field will probably be drilled in another section of the field soon.

Wyalta Oil Company's Government 4, NW NW 5-29n-81w, is at critical stage with production casing set on top of the first producing horizon in the Spindletop field, the Sundance, at 1,040 feet. Operators are waiting on cement to set and well will be drilled in about the first of next week. The company's Government 5, SW SW 32-30n-81w, has set 10-inch conductor pipe at 82 feet and is drilling at 300 feet, with the Sundance as objective. The company is building road to its Government 6, NW NW 5-30n-81w, and will skid a rig into position from Government 4 as soon as the latter is completed.

Lance Creek Active

In Lance Creek field, Niobrara County, eastern Wyoming, Ohio Oil Company's Carrie Putnam 7, NE SW 33-36n-65w, an inside location on the south side, is cleaning out and testing production in Basal Sundance at 3928-3967 feet. The seven-inch production casing is set on top of the formation at 3,928 feet. The company's Leo 5 OPC-16, east extension test, is drilling at 2375 feet. Location of the well is NW NW SW 35-36n-65w, about three-fourths of a mile east of production.

J. M. Huber Corporation's Midwest 1, SE SW 27-36n-65w, an old gas well on the east side of the Lance Creek field, is rigging up rotary equipment to deepen to Basal Sundance sands for an extension test of the field. Present producing horizon of the well is in the first Sundance at 3445 feet.

Argo Oil Corporation's Ford 3, SW NW 33-36n-65w, on the northeast side of Lance Creek, is waiting on special packer to complete rigging up of pumping equipment for completion. A short swabbing test gave the well rating from 100 to 200 barrels daily from Sundance sand at 3973-90 feet.

On the west side of Lance Creek field, A. B. Cobb's Nat Novick 1, NE SE SW 6-35n-65w, is drilling at 3782 feet and approaching a critical depth after cementing seven-inch casing at 3445 feet to case off lost tools.

Continental Oil Company's Schuricht 3-B, CSE SE 6-35n-65w, inside location in the Lance Creek field, is drilling at 2375 feet.

On the West Mule Creek field, northwest of Lance Creek, the Chester Oil Company's 3, E NW SE 14-39n-61w, is drilling at 1051 feet.

One Drilling In Tri-State Area

One active well is reported in the Tri-State Basin area. Mountain Fuel Supply Company's J. C. Donnell 1, NE SE 31-12n-97w, recent start in the Powder Wash field, Moffat County, northwestern Colorado, is rigging up rotary equipment. It is northeast of both previous producers in the field.

Ohio Oil Company and the California Company's Wm. Kyle 2, CSE SE 26-21n-79w, joint well on the discovery lease of the Big Medicine Bow field, Carbon County, southern Wyoming, is drilling at 2412 feet. The companies' other joint well in the field, Union Pacific-Cronberg 4, CSW SW 25-21n-79w, is drilling at 790 feet.

In the Rock River field, Carbon County, Wyoming, Ohio Oil Company's Harrison-Cooper 7, CNW 2-19n-78w, being deepened as a test of the Tensleep horizon, topped Tensleep sands at 5991 feet this week and is drilling in that formation at 5632 feet. No saturation has been encountered in the formation to date. The well is an old Dakota sand producer. The company's Harrison-Cooper 1, SE SW 35-20n-78w, also an old Dakota producer, but being deepened to the Sundance production level, is milling on iron at 3230 feet. Top of the Sundance was encountered at 3190 feet with saturation topped at 3225 feet.

Quealy Dome Test Cemented

In the Quealy Dome field, Albany County, southern Wyoming, The California Company's Holst 6, W SE SE 13-17n-77w, is waiting on cement to set around seven-inch casing at 3961 feet total depth, and the company is moving in material for Wilson 3, SW NW SW 18-17n-76w.

Activity in Cut Bank field, Glacier County, northern Montana, returned to normal this week following lapse of all activity in the area two weeks ago.

MOUNTAIN STATES Completions

WYOMING

Company, Well and Location	Init. Prod. Bbls.	Depth
HIDDEN DOME FIELD (Washakie County)—		
Nystrom & Smoot, State 4, cel ne ne 36-48n-91w	2	1607
Wood-Callahan, Key 1, ne ne sw 25-48n-91w	*	1910
DEWEY DOME STRUCTURE (Weston County)—		
Conway Oil Co., Government 2, se ne nw 7-41n-60w	*	2305

COLORADO

MOFFAT COUNTY (Powder Wash Field)—		
Mountain Fuel Supply Co., Hal Stewart 1, csw sw 32-12n-97w	2400	3113

*Failures; †Junked; Million cu. ft. gas.

GAS IN DAKOTA

Government farm water well shows at 3660 feet

Newell, S. D.—Natural gas was encountered at 3660 feet on the United States experimental farm here by C. C. Miller, contractor drilling an artesian well. No tests have been made to indicate whether the gas is available in commercial quantities.

Watch Deep Tests

NEWHALL TEST CORES AHEAD AFTER SHOWING OIL AND GAS

WEEKLY STAFF REPORT

Los Angeles.—Deep tests in Los Angeles Basin, both wildcat and in proven territory, seem to be the center of interest in California.

In Rosecrans area in Los Angeles County, Shell Oil Company's McKinley 1, Section 20-3-13, has reached 7727 feet and the hole has been reamed to bottom, preparatory to cementing a string of 6⅝-inch. A formation tester was recently run to 7618 feet and, after standing 20 minutes, recovered about 500 feet of mud, sand, gas and some light gravity oil. This test has about 6000 feet of open hole.

In the proven area of Rosecrans field, Barnsdall Oil Company's O'Dea 10 is coring ahead at 7680 feet in shale and streaks of oil sand. This project has shown streaks of oil sand from 7300 feet down to present total depth.

Headed for 10,000 Feet

Recent formations encountered in Union Oil Company's Bell 100, Santa Fe Springs, have shown from 90 to 98 percent shale. Bottom of the hole is at 9690 feet. No encouraging shows were found after passing the 9100-foot mark. It is understood Union Oil will drill to at least 10,000 feet, unless a rich oil sand is found or unless mechanical troubles show up. This is the only well now drilling in the old Santa Fe Springs field.

In the Newhall area, Barnsdall Oil Company's Rancho San Francisco 1, Section 26-4-17, with total depth at 6276 feet, and with 8⅝-inch cemented at 6160 feet, has pulled liner, cleaned out to bottom, and is preparing to core ahead. This hole showed some gas and high gravity oil. The showing of the well has caused a flurry in leasing circles and land several miles from the well is being placed under lease. But those leasing such property are careful not to obligate themselves to start new holes immediately. Neither are they willing to pay bonuses of any importance.

Another deep hole of interest is Continental Oil Company's Kern County Land Co. A-1, Section 8-27-24, Kern County, which was bottomed at 9545 feet. The hole bridged at 9355 feet and the drill pipe stuck at 9303 feet and was cemented at that point. Bailing is now in progress, the recovery being heavy mud and a little high gravity oil.

Gets 33 Feet of Oil Sand

Arkelo Oil Company's Arkelo 1, wildcat in Section 23-28-26, in the Lerdo area of Kern County, picked up 33 feet of oil sand from 8914 to 8947 feet, bottom. It is understood the company plans to take two or three more cores before cementing a string of casing. The hole is open from 726 feet, where a string of 13⅜-inch casing was cemented.

Superior Oil Company's Kern County Land Co. 8, in the unproven area of Ten Section field, Kern County, with bottom at 10,409 feet, is still standing cemented with seven-inch at 10,380 feet. During this idle period, heavier equipment is being installed.

15 Strings Busy at North Dome

Only 15 strings of tools are busy at North Dome, Kettleman Hills. Eight are being operated by Kettleman North Dome Association. This association has three rigs up and they should be drilling wells in a few days. Standard has five active drilling projects and one new rig up. Tide Water Associated Oil Company's Whipley 3 is bottomed at 8856 feet with plug at 8227 feet. Liner was lost in hole and is being fished out. Union Oil Company's King 2 is bottomed at 8500 feet and plug has been run to 7908 feet, preparatory to a production test. No wells are drilling on Middle Dome, Kettleman Hills.

In the North Belridge field in Kern County, Belridge Oil Company is drilling four holes, the deepest of which is bottomed at 8035 feet, with seven-inch cemented on bottom. Continental Oil Company has rig up for Result 5 in Section 36-27-20, while Tide Water Associated Oil Company's Reward 9, Section 36-27-20, is grading location and should be drilling in a few days.

Fruitvale field, near Bakersfield, continues to be fairly active, with 10 holes now drilling, three new wells about ready to spud and two rigs up. This field was discovered by Western Gulf Oil Company and this company is now drilling two holes.

Midway-Sunset Is Active

Midway Sunset field, made up of several fields in Kern County, is also rather busy, with 25 strings of tools busy. In addition, rotary rigs are being installed at seven locations and several rigs are up. Twenty-six individuals and companies are actively drilling or getting ready to drill in the field.

In the Arvin area of Kern County, wildcat territory, General Petroleum Corporation's Arvin 1, Section 26-31-29, with total depth at 7462 feet, showed for 140 barrels of 37 gravity oil, cutting 50 percent. A string of 8⅝-inch casing was cemented at 6570 feet, and swabbing was resorted to.

In the Cantua Creek area in Fresno County, Western Gulf Oil Company's Southern Pacific Land Co. 3, Section 3-17-15, has pulled liner and will make an open hole bailing test. This hole is bottomed at 8531 feet, with plug at 8500 feet. In previous tests a small quantity of 25 gravity oil was recovered.

In the vicinity of Betteravia in Santa Barbara County, E. H. Moore's Union Sugar A-1, Section 25-10-35, has finished a fishing job and is now coring ahead in hard shale at 8069 feet.

CALIFORNIA

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
EL SEGUNDO—		
Ohio Oil Co., A. S. Gough 2	225	7341
Richfield Oil Co., El Segundo 2	1200	7319
RICHFIELD—		
Bachmann Pet. Co., Kelly 1	55	3810
FRUITVALE—		
Bilgrad Oil Co., Bilgrad 1	150	4121
KERN FRONT—		
Standard, Ward 3	175	1995
MIDWAY-SUNSET—		
Five Point Pet. Corp., Two-4	30	987
Standard, No. 53-33D	685	3080
Texas Co., Midway 18	435	3098
MOUNTAIN VIEW—		
Standard, Mabry 4	150	4955
PREMIER—		
Green Bear Oil Co., Grimes 5	235	2675
TULARE COUNTY—		
Trico Oil & Gas Co., Callison 1	*	4620

*Failures; †Junked; Million cu. ft. gas.

SEEKS GAS LEASES

National Gas would buy producing property

Washington, D. C.—Permission to acquire several properties of the Commonwealth Gas Corporation, Charleston, West Virginia, is being sought from the securities commission by National Gas & Electric Corporation, New York, and two subsidiaries, Industrial Gas Company and Gas Producing Company of Ohio.

For a $918,000 cash consideration, Commonwealth would sell to National Gas & Electric Company the physical properties of Mid-East Gas Company, Zane Gas Company, Kenova Gas & Oil Company, located in Muskingum County, Ohio, and the Kemrow Company, which Commonwealth owns jointly with Kenova Gas. National would also receive 401 shares of no par value common stock of the Fritz Oil & Gas Company.

The proposal then calls for acquisition by Industrial Gas Company of the physical properties of the Zane Gas Company from National Gas, while National Gas would obtain $22,000 of 6 percent demand promissory notes of Industrial Gas.

National Gas would acquire $400,000 of 5 percent first mortgage bonds of Gas Producing Company of Ohio, while the latter company would take over the physical properties of Mid-East Gas, Kenova Gas & Oil, and the Kemrow Company.

New Illinois Field

100-BARREL WILDCAT WELL FOUND IN CLAY COUNTY

EASTERN FIELDS — WEEKLY STAFF REPORT

Chicago.—Natural flow of between 75 and 100 barrels has been encountered in the first deep test drilled in Clay County, Illinois. The well came in at 2250 feet, which is exceptionally deep for this locality as oil is usually produced from 750 to 1000 feet. The new producing territory is about 40 miles west of the present small production near Casey, Illinois. The well is Pure Oil Company's Weiler 1, four miles south of Clay City.

The oil is 38 gravity and comes from the Cypress sand, the same formation that produces at Casey and Lawrenceville. Weiler 1 is in the center of a large block of acreage. Pure Oil Company is said to control from 250,000 to 400,000 acres in Clay, Jasper, Richland, Edwards, Effingham and White counties. Other large companies with acreage in this vicinity include Shell Petroleum Corporation, Gulf Oil Corporation, Ohio Oil Company and Carter Oil Company.

Pure Oil Company was prepared to drill to 8000 feet and had not anticipated any oil before 4000 feet.

It is anticipated that considerable additional drilling will result from the strike.

WANTS GAS CHARTER

Company to distribute through 5 units

Harrisburg, Pa.—Application for a charter for the Pennsylvania Gas Transmission Company, which proposes to furnish natural gas from Western Pennsylvania and West Virginia fields for distribution by five United Gas Improvement Company affiliates now selling manufactured gas, is before Secretary of the Commonwealth David Lawrence.

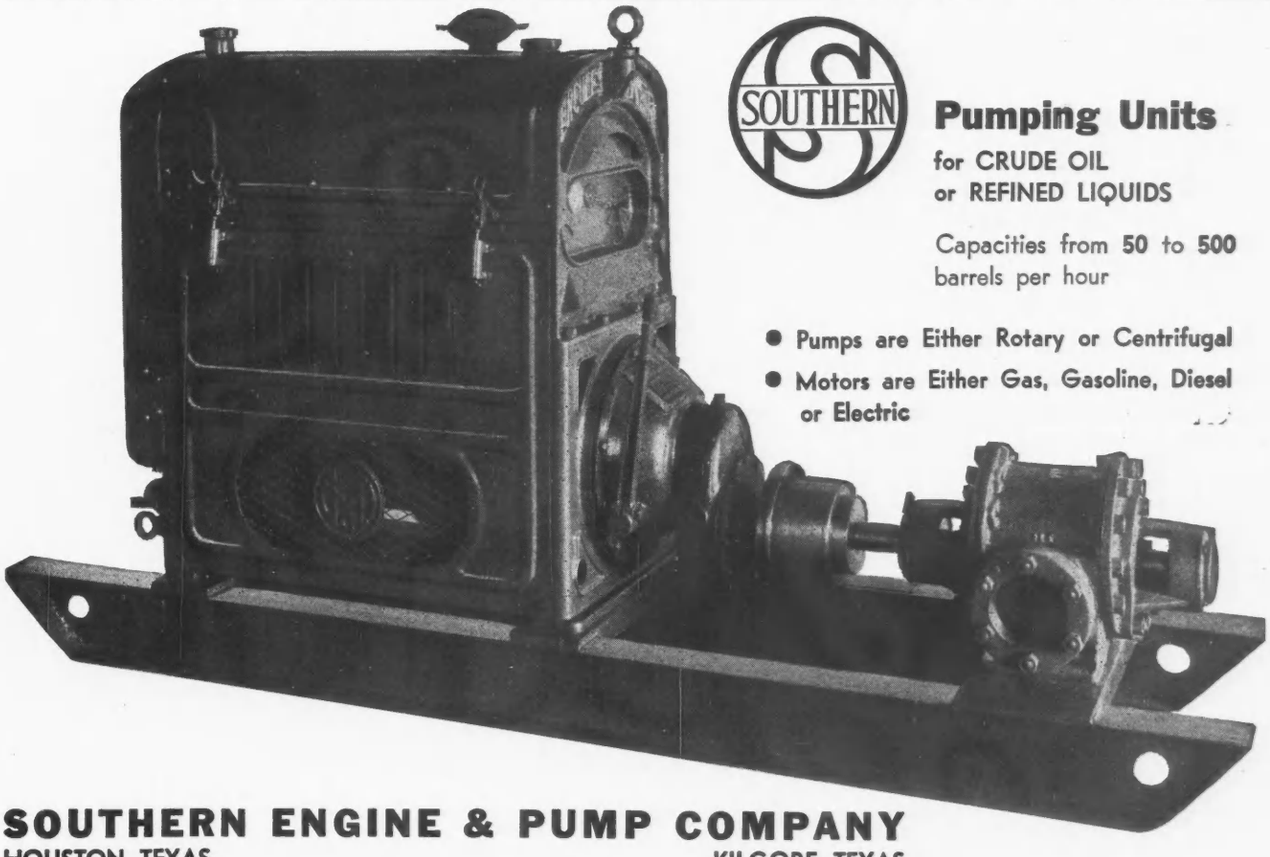
Lawrence indicated he would confer with Governor George H. Earle and officials of the public service commission before granting a charter. If the charter is issued, the company will appear before the public service commission for a certificate of public convenience and necessity.

Related applications pending before the public service commission include the company's requests for permission to purchase two existing pipe lines. United Gas Improvement affiliates have filed rate schedules with the commission showing reductions which would accrue to 130,000 customers if the plans are approved.

Hundreds of protests, principally by anthracite coal interests, against the plan have been filed with Governor Earle and the public service commission.

Those named as incorporators on the transmission company application are H. E. Cooper, Sewickley; T. B. Gregory, Emlenton; David E. Mitchell, J. Frank Robinson, Thomas R. Weymouth and Don M. Wilson, all of Pittsburgh. Directors, in addition to the incorporators, are Walter G. Veckford, Pittsburgh; Ed Reynolds, Jr., Stamford, Connecticut; H. A. Wallace, Charleston, West Virginia; W. A. Daugherty, Phillip C. Gossen and S. H. Leech, Jr., all of New York.

Pawnee, Okla.—Sealed bids on 966.59 acres of land in Kay County, near Tonkawa, will be received until 12 p.m. March 12, at the Pawnee Indian agency, according to an announcement by Lem A. Towers, superintendent. Twenty-two tracts are included in the sale.



SOUTHERN

Pumping Units

for CRUDE OIL
or REFINED LIQUIDS

Capacities from 50 to 500 barrels per hour

- Pumps are Either Rotary or Centrifugal
- Motors are Either Gas, Gasoline, Diesel or Electric

SOUTHERN ENGINE & PUMP COMPANY

HOUSTON, TEXAS — KILGORE, TEXAS

Amarillo.—Erection of a 65,000,000-foot daily capacity well-pressure type natural gasoline plant will be started within a month in the Sunray-Dumas area, Moore County section of the Texas Panhandle by Shell Petroleum Corporation and Sinclair Prairie Oil Company. Both concerns plan to launch a large drilling program on their respective sour gas producing leases in the area to assure an adequate supply of gas under proration restrictions. The gasoline plant will be located in the S ½ SE Section 176, Block 3-T, T. & N. O. survey.

Columbian Carbon Company is reported to have contracted to erect a carbon black plant on a nearby site and purchase the residue gas from the above unit.

And then . . . .

WAR!

We elected one President on the campaign slogan "He kept us out of war." Less than 6 months later he plunged us into war for which our children's children will still be paying!

We can't afford to trust any one man to keep us out of war, — and Congress now threatens to do just that.

Let's stop it. Wire your Senators and Representatives that you want MANDATORY neutrality legislation, barring all commerce with warring nations. Another war like the last could ruin this great nation.

Alva Guy Blanchard

Shreveport, La.

EASTERN FIELDS
Completions

OHIO

Company, Well and Location	Init. Prod. Bbls.	Depth
ASHLAND COUNTY—		
Ohio Fuel Gas Co., H. Heffelfinger 1	¶	3012
ATHENS COUNTY—		
Ohio Fuel Gas Co., D. W. Lambert heirs 1	*	982
J. L. Winner 1	¶	998
Leeper & Co., Hattie Dodds 2	*	540
Gibson & Co., Fred Laughlin 3	*	850
Ohio Fuel Gas Co., A. C. Creamer 2	¶	1549
BELMONT COUNTY—		
T. J. Reese., L. A. Ridgway & Sutton 2	15	1861
Barnesville Dev. Co., Dr. John A. Clark 1	¶1/3	1950
Newell Phillips, W. J. Phillips 1	*	1950
Barnesville Dev. Co., J. House 3	¶	1774
E. Stepp & Co., Fred Groves 3	*	750
COSHOCTON COUNTY—		
Preston Oil Co., W. A. Little 3	74	3164
CUYAHOGA COUNTY—		
East Ohio Gas Co., Joseph Sherman 1	¶1	2663
FAIRFIELD COUNTY—		
City Nat Gas Works, Chester Beiaze 2	*	....
GALLIA COUNTY—		
Southern Ohio Dev. Co., John Myers 1	*	3018
GUERNSEY COUNTY—		
Beers O & G Co., Minnie Beers 1	3	1275
Flannery & Co., Donald Hall 1	¶	1245
Barnesville Dev. Co., W. Anderson 1	¶	1602
HANCOCK COUNTY—		
O'Connor & Co., M. R. Rader 1	3	1425
HOLMES COUNTY—		
Ohio Fuel Gas Co., Burgess Bird 2	¶	3421
B. C. Bird 1	¶½	3454
Louise Vernon 1	*	3225
KNOX COUNTY—		
Settles & Lightner's C. H. Davidson 1	15	2935
Hulse-Kuntz, Inc., Lovey Stone 1	90	3193
J. B. Reed & Co., Alva Robinson 1	¶	728
Ohio Fuel Gas Co., Sylvia Flack 2	¶	2980
Upham Gas Co., J. Harding 1	¶	1980
LICKING COUNTY—		
Emerald Petroleum Co., Cullison 2	112	3050
Preston Oil Co., Fred & Ethel Baughman 3	2	646
Scott & Co., William Weakly 2	10	....
Armbruster & Stricker, Sarah Patton 6	7	652
LORAIN COUNTY—		
Kemrow Co., Schneider & Wyles 1	¶¾	2683
Mary Walker	¶1½	2677
Ohio Fuel Gas Co., Morris Nesbit	¶	2571
MEDINA COUNTY—		
E. R. Edson & Son Co., Hayden Coe 1	*	450
MEIGS COUNTY—		
Ohio Fuel Gas Co., William Dillinger 1	¶	1580
George Heilman 2	¶	1690
Meigs Dev. Co., Luther Lane 1	*	2148
Ohio Fuel Gas Co., Lucy Roush 2	¶	1935
Goodfellows Co., C. Circle 2	¶	1921
MONROE COUNTY—		
A. E. Robinson, Warren Miracle 1	6	1190
W. T. Geary, R. Escott 2	¶¾	1691
MORGAN COUNTY—		
Burt & Son, Susan Minor 8	¶¼	452
PERRY COUNTY—		
Mid-East Gas Co., H. W. Williams 2	¶⅓	3210
Kachelmacher Estate, Hemlock Coal Co. 17	60	3500
Preston Oil Co., Thomas Marshall 1	*	3700
PORTAGE COUNTY—		
Wittmer Oil & Go Co., Scott Patterson 1	¶	4055
RICHLAND COUNTY—		
Ohio Fuel Gas Co., L. Devilbiss 1	*	2667
SCIOTO COUNTY—		
Wood, J. Rickart 1	¶	604
STARK COUNTY—		
Lyons & Co., Sippo Lake Co. 1	¶4¼	4396
Ohio Fuel Gas Co., Elmer Rohr 1	¶	4157
East Ohio Gas Co., K. W. Bender 2	¶2½	4229
Peter Tippel 1	¶1⅛	4152
Willowdale 1	¶1⅓	4256
Lyons & Co., L. Fasnacht 1	¶¾	4648
SUMMIT COUNTY—		
East Ohio Gas Co., Camp Y'Noaha 1	2¾	4143
TUSCARAWAS COUNTY—		
Walton & Co., D. W. Welch 2	*	1009

WEST VIRGINIA

Company, Well and Location	Init. Prod. Bbls.	Depth
BOONE COUNTY—		
Cambridge Gas Co., Garnet Wiseman 10	¶½	3624
Owens Illinois Glass Co., V. G. Vandelinde 2	¶	2118
CALHOUN COUNTY—		
Ivy Gainer, Gainer 2	¶¼	2170
Hope Natural Gas Co., L. J. Smith 7747	¶1	1964
Godfrey L. Cabot, Inc., H. M. Buckley 2	¶	2117
CLAY COUNTY—		
Virginia Gasoline & Oil Co., Brown, Swan, Goshorn & Geary 38	30	1920
GILMER COUNTY—		
Massey & Jarvis, William Clovis 1	¶	1818
KANAWHA COUNTY—		
United Carbon Co., L. E. Campbell 1	¶7	4852
Forrest Copenhaver 1	¶6	5041
Ahaz Spencer 2	¶4½	....
United Fuel Gas Co., A. J. Bruen 4656	¶5	5126
Columbia Carbon Co., W. D. Lewis 15	¶3½	4852
MARION COUNTY—		
V. E. Tennant's Lough 1	¶	2933
PLEASANTS COUNTY—		
Boyer Drlg. Co., Solomon Robinson 1	¶	1850
RITCHIE COUNTY—		
Buchannon, Winifred Woods 2	5	1810
Leeton & Flanigan, John Ross 1	¶1	1850
W. H. Bickel, John Hyman 3	¶½	2213
W. M. Stroler, S. P. Burbridge 1	¶1½	1700
ROANE COUNTY—		
Godfrey L. Cabot, Inc., T. F. Smith 1	*	5995
Lowther Bros., John L. Kee 1	*	1475
WAYNE COUNTY—		
Lusher & Lusher, V. L. Lusher 4	¶⅓	3355
WIRT COUNTY—		
W. C. Patterson, C. E. Vandevender 24	1	325
Glenn W. Roberts, Roberts Oil Co. 1	*	5101

INDIANA

Company, Well and Location	Init. Prod. Bbls.	Depth
GIBSON COUNTY—		
Midwest Dev. Corp., Wm. George & Co. 1	*	1445
PIKE COUNTY—		
P. G. Thomas, John Harrison 1	¶	835
P. C. Andrews & Co., Enos Loveless 13	20	1399
Indiana Southwestern Gas Corp., Sallie Harmon 2	¶	1040
VANDERBURG COUNTY—		
K. R. Bixby, Christ Ziss 5	25	1251
P. E. Tichenor, John Schaefer 1	*	1200

PENNSYLVANIA

Company, Well and Location	Init. Prod. Bbls.	Depth
GREENE COUNTY—		
Dunn Mar Oil & Gas Co., Kuhn heirs 2	¶¼	1835
Manufacturers' Light & Heat Co., Archer 1	*	1931
POTTER COUNTY—		
N. Y. State Natural Gas Corp., Saxton 1	¶20½	4808
WASHINGTON COUNTY—		
Union Gasoline & Oil Corp., Vankirk 5	¶4	2089
Mingo Oil & Gas Co., Adams 1	¶2	1575
Carnegie Natural Gas Co., J. O. Stockdale 1	*	3335
A. V. Lewis, William Mankey 1	10	2975
Carnegie Natural Gas Co., Dickerson 1	*	2979
Manufacturers Light & Heat Co., George Burig 1	¶2½	2800
Penn Oil & Gas Co., J. A. Russell 1	¶⅓	1778

*Failures; †Junked; Million cu. ft. gas.

MICHIGAN
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ARENAC COUNTY—		
Turner Petroleum Corp.'s Thompson 1, nw se se 4-20n-4e	110	2640
T. F. Caldwell, Inc.'s Peavy 1, nw sw ne 9-20n-4e	15	2599
American Drilling Co.'s Packer 1, sw ne sw 14-20n-4e	*	2890
GLADWIN COUNTY—		
Sun Oil Co.'s Salla 1, se nw sw 11-18n-1w	576	3653
Wicklund Dev.'s State A-2, se sw se 11-18n-1w	1900	3629
State A-3, ne sw se 11-18n-1w	1790	3635
MIDLAND COUNTY—		
Pure Oil Co.'s Rayner D-3, s½ se ne 11-13n-2w	74	3453
MONTCALM COUNTY—		
Daily Crude Oil Co.'s Fulford B-3, nw ne ne 35-11n-5w	*	3240
Rex Oil Co.'s Conners 1, se nw ne 35-11n-5w	*	3210

*Failures; †Junked; Million cu. ft. gas.

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Wildcat Tests

ALABAMA

CHOCTAW COUNTY—Joe Modisett et al's McCorvey 1, se sw sw 20-9n-2w, spd, sd 105 ft to complete, rur.

GREENE COUNTY—Willis & Payne's R. C. Lett 2, se nw 6-21n-2e, dk.

HOUSTON COUNTY — Rice O&G Co.'s Oakley Est 2, nw sw 9-3n-29e, dr 4975 ft.

MOBILE COUNTY — Grand Bayou O&G Co.'s J. A. Stafford 1, sw sw 24-7s-3w, lcn.

ARKANSAS

CLARK COUNTY — McLarry & Carlin's Bierne Lbr. Co. 1, ne se ne 22-10s-21w, rur.

J. G. Wooten's Sparkman 1, sw nw 1-11-20, sd 545 ft.

CLEVELAND COUNTY—J. R. Lockhart's Robertson 1, sw se 36-10-11, sd 3362 ft.

CLAY COUNTY—Nelson et al's Underwood 1, se sw ne 4-20-8, lcn.

DALLAS COUNTY—Walter Lown's Atkinson 1, nw se 7-10-13, temp abn 2763 ft.

GRANT COUNTY—Wallace & Staples' W. F. Davis 2, se se nw 23-6-15, dr 2200 ft.

HEMPSTEAD COUNTY—Root Pet. Co.'s Drake 1, se nw 23-14-24, elev 311 ft, cored Paluxy sand, so 2335-48 ft, dr 2510 ft. J. R. Birdwell's Duckett 1, 24-13-24, 10-in csg 100 ft. Sheppard & Todd's Smith 1, ne sw se 1-11-25, rur.

LA FAYETTE COUNTY—King Drlg. Co.'s Walcott 1, c ne sw 36-19-26, spd. A. M. Neely's Meek 1, ne nw 35-19-25, dr 3180 ft.

LITTLE RIVER COUNTY—J. G. Strahan's Dierks Lbr. Co. 1, 21-12-28, dr 2085 ft.

MILLER COUNTY—Erwin & Leach's Merchants & Planters Bank 1, se se 18-15-26, spd. Thad Bryant's Commercial Nat. Bank 1, 20-18-28, lcn.

NEVADA COUNTY—Benedum & Trees Oil Co.'s Block 1, ne se 9-14-20, coring 4375 ft. Jackson 1, nw ne 9-14-20, tested 900 ft oih 2122-32 ft, cemtd csg 2134 ft, td 2134 ft. W. S. King's Wren 1, sw ne 6-13-22, dr 1650 ft. Walter Lown's P. C. Grayson 1, sw se 12-20-14, dk. C. B. & F. Pet. Co.'s Haynie 1, 5-14-20, sd 1170 ft. A. M. Lacey's Bennett 1, sw ne 28-14-22, rur. Axel Larson's J. T. Wortham 1, sw nw 29-13-21, sd 2340 ft. W. E. Stewart's Mendenhall 1, nw ne 1-14-20, 10-in csg 105 ft. G. H. Vaughn's Christopher 1, sw se 3-14-20, rur.

OUACHITA COUNTY—Lion O. R. Co.'s Levy 1, 21-15-15, top Nacatosh 2138 ft, tested sw 4935-60 ft, coring 5160 ft.

SEVIER COUNTY—J. C. Brinkley's Dierks Lbr. Co. 1, se ne 14-10-29, rur.

UNION COUNTY—Lion O. R. Co.'s Morgan 1, 18-18-17, dr 4530 ft red shale. Ark. Southern Oil Co., Inc.'s G. G. Simmons 1, nw nw 15-18-13, rur.

CALIFORNIA

FRESNO COUNTY

CANTUA CREEK—Western Gulf's G. P. Land Co. 3, 3-17-15, td 8531 ft, redr to 8500 ft, to pull liner and make open hole test.

KERN COUNTY

ARKELO—Arkelo Pet. Co.'s No. 1, 23-28-26, td 8947 ft, top oil sand at 8914 ft, to take two or three more cores and set pipe.

ARVIN—Bear Mountain Oil Co.'s Tejon 1, 21-31-30, rur. General Pet. Corp.'s Arvin 1, 26-31-29, td 7462 ft, washed perforations, swabbing 140 bbls, 37 gravity oil, cut 50 percent.

SO. MARICOPA—E. A. Bender's Robinson 1, 14-10-23, td 1235 ft, plug 550 ft, sd. Trans-Line Pet. Corp.'s No. 1, 3-10-23, sd 662 ft.

PREMIER—Bojaki Oil Co.'s Bowen 1, 28-27-27, dr shale 1515 ft.

GREENFIELD — British American's Smith 1-A, 21-31-27, sd 1128 ft.

ABBREVIATIONS

The following abbreviations, signs, etc., are used in completions and wildcat reports in THE OIL WEEKLY.

*—*dry hole abandoned well.*	owdd—*old well drilling deeper*
‡—*salt water (completions).*	owpb—*old well plugging back.*
†—*junked and abandoned.*	pb—*plugged back or plugging back.*
¶—*million feet of gas.*	r—*reaming.*
abd—*abandoned.*	rog—*rig on the ground.*
bbls—*barrels.*	rur—*rigging up rotary tools.*
br—*building rig.*	rust—*rigging up standard tools.*
b.s.—*basic sediment.*	sd—*shut down.*
csg—*casing.*	sdtr—*sidetracking.*
co—*cleaning out.*	sg—*show gas.*
dd—*drilling deeper.*	si—*shut in.*
dk—*derrick.*	so—*show oil.*
dr—*drilling.*	so&g—*show oil and gas.*
fsg—*fishing.*	spd—*spudding.*
ft—*feet.*	sr—*straight reaming.*
hfw—*hole full of water.*	sw—*salt water.*
in—*inches.*	td—*total depth.*
lcn—*location.*	ur—*underreaming.*
m—*milling.*	wih—*water in the hole.*
mim—*moving in materials.*	wo—*workover.*
mit—*moving in tools.*	wocs—*waiting on cement to set.*
mot—*milling on tools.*	wosr—*waiting on standard rig.*
n, s, e, w—*north, south, east, west.*	
oih—*oil in hole.*	

GRAPEVINE—Buffalo Oil Co.'s Tejon 1, 5-10-19, dr shale 3730 ft. Ohio Oil Co.'s Title Ins. D-1, 21-11-19, td 6662 ft, pulled liner, to deepen. Reserve Oil & Gas Co.'s Ritchie 33-1, 33-11-19, sd 6030 ft; Tejon 33-2, td 4505 ft, redr to 4453 ft, in shale; Tejon 33-3, td 4431 ft, gas well shutin.

SAN EMIDIO—I. L. Burch's No. 1, 3-10-23, sd 2590 ft. Union's No. C-1, 34-11-22, td 3821 ft, recovered fish, to drill ahead.

MOUNT POSO—Calcoast Oil Co.'s No. 1, 36-26-27, sd 2655 ft.

WASCO—Continental Oil Co.'s K.C.L. A-1, 8-27-24, td 9545 ft, stuck and cemented 4 in dr pipe at 9303 ft, dr out, bailing oil and mud. Seaboard Oil Corp.'s K.C.L. C-1, 26-27-24, rur.

ROSEDALE—Continental Oil Co.'s K.C.L. B-1, 12-29-26, dr sandy shale 4343 ft.

DEVIL'S DEN—Den Pet. Co.'s Bates 1, 20-25-19, td 3280 ft, rep equip. Lube Oil Co.'s No. 1, 2-25-18, td 3675 ft, r.

JASMINE—Doyle Pet. Corp.'s Quinn 1, 15-25-27, td 2956 ft, plug 2882 ft, bailing; Quinn 2, rur.

MOUNTAIN VIEW — Mohawk Pet. Co.'s Earl Fruit 3, 4-31-29, dr shale 5200 ft, oil sand 5145 to 5160 ft.

RIO BRAVO—Mohawk Pet. Co.'s K.C.L. 1, 23-29-25, rur. Petroleum Securities Co.'s Wright 1, 23-29-25, sd 50 ft. Tide Water Associated's K.C.L. 1, 30-29-25, td 8303 ft, wocs 6⅝ in on bottom.

KERN FRONT—Seskayden Oil Co.'s No. 3-A, 17-28-27, td 2890 ft, plug 2870 ft, pumping 200 bbls gross, cut 60 percent; Sesnon 4-A, 17-28-27, dr sandy shale 500 ft.

TEN SECTION—Shell's Canal 21-14, 14-30-25, lcn. Superior Oil Co.'s K.C.L. 8, 11-30-26, td 10,409 ft, wocs 7 in at 10,380 ft, placing heavier equip.

GOSFORD—Signal Oil & Gas Co.'s K.C.L. 1-A, 21-30-27, dr shale 6320 ft.

MISCELLANEOUS

HUMBOLDT COUNTY—Texas Co.'s Eureka 2, 22-3-1, td 7418 ft, r.

KINGS COUNTY—Central Calif. Utilities Corp.'s Lakeview 3, 11-23-19, td 1190 ft, wocs 6⅝ in at 1150 ft. A. S. Clare's Laymance 1, 20-20-22, rig. Dudley Ridge Dev. Co.'s No. 2, 24-23-20, foundation. Pyramid Prod. Co.'s Spreckles 2, 16-24-18, lcn. Glen C. Stone's Teeter 1, 25-20-20, ready to spud. Tide Water Associated's Avenal 2, 35-23-17, td 1953 ft, redr to 1475 ft in silty oil sand.

SAN BENITO COUNTY—Tide Water Associated's Murphy Ranch 1, 5-12-4, dr shale 6382 ft.

SAN JOAQUIN COUNTY—Standard's Tilden Com. 1, 31-2-5, td 5312 ft, ran 183 ft of 4¾ in, including 120 ft of perforated to 5310 ft, to swab.

SOLANO COUNTY—Amerada Pet. Corp.'s Drouin 2, 35-4-2, lcn; Mayhood 1, dr shale 600 ft.

TULARE COUNTY—J. W. Alford's Williams 1, 28-16-23, sd 1023 ft. R. R. Ellis' Ellis 1, 20-24-23, rig. E. P. Jennings' No. 1, 4-24-23, td 2709 ft, wet on prod test, to test at1900 ft for gas showings. Trico Oil & Gas Co.'s Callison 1, 27-21-25, td 4620 ft, abn.

MONTEREY COUNTY—Amil A. Anderson's No. 1, 15-24-14, sd 680 ft. Shell's Branch 2, 34-24-10, dr shale 6670 ft. Texas Co.'s Dunphy 1, 30-19-7, dr shale 2796 ft.

SAN LUIS OBISPO COUNTY—Aviation Oil Co.'s Brintnall 1, 10-11-35, sd 1639 ft. Barnsdall's K.C.L. A-1, 1-32-20, rur. R. A. Foster's McKee 1, 2-32-23, dr brown shale 5084 ft. A. T. Jergins Trust's Indian Knob 1, 26-31-12, td 1438 ft, wocs 8⅝ in at 1436 ft. Temblor Oil Co.'s No. 1, 22-32-21, rur. Union's Porter 1, 22-32-15, dr hard shale 4931 ft. United Foreign Oil Co.'s Panorama 2, 2-32-21, sd 2435 ft.

SANTA BARBARA COUNTY

SUMMARLAND—Julius Dietzman's Fithian 1, 8-4-25, sd 1025 ft.

GATO RIDGE—O. C. Fields Gaso Corp.'s Continental 1, 4-8-32, td 2812 ft, fsh, to deepen.

BETTERAVIA—E. H. Moore's Union Sugar A-1, 25-10-35, dr hard shale 8068 ft.

SANTA YNEZ — Nine Springs Oil Co.'s Brinkenhoff 1, 9-7-30, td 3080 ft, co.

SANTA MARIA—W. D. Shaffer's Houk 1, 9-9-33, td 5003 ft, testing oil saturated cores to determine if more hole is to be drilled. Union's O'Donnell 1, 21-10-34, grading.

CASMALIA—Valley Oil Co.'s No. 1, 20-9-34, dr shale 1510 ft.

VENTURA COUNTY

RED MOUNTAIN — Continental Oil Co.'s Casitas 1, 7-3-23, dr hard shale 5410 ft.

SESPE CREEK—Speik Oil Co.'s Speik 1, 35-5-19, dr shale 1890 ft.

OXNARD—Vaca Oil Explor. Co.'s Calif. Lands 1, 6-1-21, sd 2830 ft.

VENTURA—Ventura Explor. Co.'s Sexton 1, 30-3-22, sd 9525 ft.

SOUTHERN CALIFORNIA

NEWHALL—Barnsdall Oil Co.'s Rancho S. F. 1, 26-4-17, sd 6276 ft, pulled liner, to core ahead. This hole made some oil with gas, fair pressures, but little information is available. Holbrook Oil Co.'s Newhall Land 1, 28-4-16, sd 4025 ft, preparing to resume dr.

PICO CANYON—A. G. Burt's No. 1, 36-4-17, dr 310 ft, showing gas and oil at 297 ft.

LYNWOOD—Calizoo Oil Co.'s Saulque 1, 9-3-13, sd 3995 ft.

NO. LONG BEACH — Geo. L. Clayton's Clayton 1, 32-3-12, sd 2130 ft.

FOX HILLS AREA—Country Club Oil Co.'s No. 1, dr sand streaks shale 1050 ft.

EAST WHITTIER—Drillers Inc.'s No. 1, 22-2-11, dr shale streaks sand 970 ft.

MONTEBELLO—Danciger Oil & Ref. Co.'s Baldwin 1, 11-2-11, grading roads.

CLEARWATER—H. Heide's Rogers 1, 20-3-12, rig.

PUENTE—Honolulu Oil Corp.'s Butler 1, 15-2-10, dr shale and sand 3260 ft.

TORRANCE — Imperial Gypsum & Oil Corp.'s McDowell 1, 35-3-14, td 7210 ft, co.

WALNUT—Julian & Criswell's Langstaff 1, 5-2-9, dr shale streaks sand 1230 ft.

HERMOSA BEACH—Leora Oil Co.'s No. 1, 31-3-14, dr hard shale 4090 ft.

PALOS VERDES HILLS—McClaren Bros. No. 1, 27-4-14, td 3990 ft, redr at 1652 ft.

ANAHEIM—Shell's Mathis 1, 23-4-10, dr shale 3365 ft.

ROSECRANS—Shell's McKinley 4-1, 20-3-13, dr shale streaks gray sand 7726 ft.

HAWTHORNE — Signal Finance Corp.'s Woods 1, 10-3-14, td 9395 ft, plugging and trying to locate water.

CULVER CITY—Vincent Pet. Co.'s Harriett 1, 12-2-15, rur.

DAVIDSON CITY — C. G. Willis' Flood Control 1, 11-4-13, td 5890 ft, redr to 5685 ft, cored 15 ft, os 5670-5685 ft, to set 7-in csg.

ORANGE COUNTY—Mesa Oil Co.'s No. 1, 29-6-10, dr hard brown shale 6044 ft.

COLORADO

ADAMS COUNTY — Glenridge Oil Co.'s Hills 1, csl se se 27-3s-64w, dr 4267 ft in shale and carrying 6¼ in csg at 4260 ft.

KIOWA COUNTY—Gulf Oil Corporation's Risser-Union Pacific 1, csw ne 1-17s-50w, dr 6133 ft in sand.

MOFFAT COUNTY—Anderson Kerr Drilling Co. & Phillips Petroleum Co.'s Government 1, cse se 19-9n-99w, dr 900 ft in hard brown sandy shale.

FLORIDA

LAKE COUNTY—Oil Dev. Co. of Fla.'s Gulf Expl. Co. 2, se se 17-24s-25e, ran electrical tester to 6000 ft, dr 6105 ft, red material.

POLK COUNTY — Edw. A. Hill's Polk County Lbr. Co. 1, nw ne 32-25s-25e, dk.

KANSAS

BARTON COUNTY—Duee & Brouk's Baker 1, ne se sw 16-17s-13w, 200 ft wih, 3476-78 ft, td. I. T. I. O. Co's Schrepel 1, se se ne 26-20s-11w, fsg 2905 ft. Herndon Drlg Co & Morgan & Flynn's Robenseffer 1, cnw 7-18s-15w, woc. Stanolind's Burmeister 1, ne ne sw 33-19s-11w, 2000 A; testing. C. L. Price et al's Kraft 1, sw nw ne 10-17s-11w, dr 1030 ft. C. L. Carlock's Leibel 1, se ne se 18-18s-11w, set 15-in csg 285 ft. Missouri Valley O & G Co.'s Peach 1, se se se 24-16s-14w, ur 12-in csg 770 ft. Pierson et al's Hart 1, sw sw ne 9-20s-13w, lcn abd. Ralph Wixon & Union O & R Co's Frederick 1, nw nw nw 12-16s-13w, mim. John Burton et al's Wendel 1, ne ne ne 13-19s-11w, set 6-in csg 2935 ft; dr 2943 ft.

BUTLER COUNTY—Cox & McGinnis' Faulders 1, sw sw ne 27-25s-3e, dr 3165 ft. A. M. Landon et al's McCaig 1, ne ne se 13-28s-6e, spd.

CHASE COUNTY—Hanna et al's Brothers 1, se se nw 25-20s-8w, set 8-in csg 2409 ft; co.

CHAUTAUQUA COUNTY—Brosius et al's Morris 1, sw nw sw 6-32s-12e, hfw 2165 ft.

COWLEY COUNTY—W. M. McKnabb's Weldschmidt 1, sw sw nw 18-34s-6e, dr 2115 ft. McKnabb's Community 1, cne nw 14-34s-3e, dr 3135 ft. Wentz & Amerada's Rush 1, nw sw sw 36-34s-6e, dr 650 ft.

DECATUR COUNTY—Winkler & Koch's Vessey 1, cnw se 26-3s-26w, sd 4007 ft.

ELLIS COUNTY—Empire's Samuelson 1, ne ne ne 31-11s-16w, woc. Murphy Oil Co's Weisner 1, se se sw 12-14s-19w, dr 3000 ft. Lario O & G Co's Cress 1, ne ne ne 13-11s-17w, dr by 2683 ft. Empire Hall 1, se se se 2-12s-17w, set 10-in csg 2540 ft; co 2675 ft. Sunray Oil Co's Befort 1, ne ne ne 11-14s-20w, dr 3245 ft. Winkler & Koch's Jensen 1, sw sw ne 3-13s-18w, sd 80 ft. Mazda Oil Co's Henderson 1, sw sw ne 27-11s-18w, mim. Noble Pet Corp's O'Laughlin 1, nw nw se 13-12s-19w, ru. Earl Wakefield's Putnam Mort Co 1, se se nw 32-15s-17w, lcn. Ted Kors et al's Koblitz 1, se sw nw 23-12s-18w, 500 A; testing.

ELLSWORTH COUNTY—Forst et al's Dolechek 1, ne ne sw 36-14s-8w, sd 300 ft.

FINNEY COUNTY—Keith & Olson Drlg Co's Ely 1, nw nw sw 34-22s-29w, dr 2760 ft.

GRANT COUNTY—Columbian Fuel Co's Gray 1, cse 3-29s-35w, dr 1520 ft.

GREENWOOD COUNTY—Ohio Oil Co's Schwab 1, se sw se 9-24s-10e, dr 2523 ft.

HARPER COUNTY—Carter Oil Co et al's Seihart Estate 1, csw nw 4-34s-8w, mim.

HARVEY COUNTY—Harburney Oil Co's Schragg 1, nw nw se 24-22s-3w, fsg 3711 ft.

HASKELL COUNTY—Kuhn Bros et al's Meredith 1, csw/4 10-30s-33w, otd 2800 ft; rudd.

KINGMAN COUNTY—Shell Pet Corp's McMichael 1, cw½ w½ sw 12-27s-10w, sd 4396 ft.

LANE COUNTY—K. C. Bates' Bates-Nimocks 1, cnw ne 16-16s-28w, cor.

LOGAN COUNTY—Rosespring Drlg Co et al's Wright 1, cse se 12-15s-35w, skid 50 ft north; ru.

LYON COUNTY—Clyde Fred et al's Bruce 1, nw nw nw 13-18s-10e, woc.

McPHERSON COUNTY—Hutchinson O & G Co et al's Berg 1, sw sw se 15-20s-3w, ur 13-in csg, 1685 ft. Wamhoff et al's Nuse 1, se se sw 18-18s-4w, rur. Smith et al's Larson 1, nw nw sw 35-18s-5w, mim. Bradley Bros' Barnholt 1, sw sw se 30-20s-5w, br.

NESS COUNTY—Newton Dev Co's Tenny 1, nw nw se 19-18s-25w, co 3600 ft.

RENO COUNTY—Clyde Pulse et al's Payne 1, sw nw ne 4-22s-7w, dr 3100 ft. Foraker et al's Hiett 1, se sw ne 34-24s-4w, fsg 3848 ft. Helmerich & Payne et al's Evans 1, ne ne se 29-24s-6w, rot rig. Helmerich & Payne's Benson 1, ne ne ne 5-25s-6w, dr 3728 ft. Atlantic's Page 1, se nw nw 19-23s-7w, dr 2300 ft. Olson Drlg Co et al's Herriman 1, nw nw nw 22-24s-8w, rot rig.

RICE COUNTY—Sage et al's Patton 1, sw sw sw 5-21s-7w, testing. Empire's Banterton 1, se sw se 11-18s-8w, 2000 A; no test. Continental et al's Michells 1, ne ne sw 12-18s-2w, set 12-in csg 212 ft. T. C. Johnson's Schubert 1, sw sw sw 9-20s-10w, dr 476 ft. L. C. Douglas' Coyne 1, ne se se 24-21s-8w, spd. John Hanna et al's Fulton 1, nw nw ne 24-19s-6w, spd. Manning, Martin et al's Mathes 1, se sw ne 27-21s-8w, rur. Roy Ramsey et al's Malone 1, nw nw ne 1-20s-10w, ru.

ROOKS COUNTY—Snowden & McSweeney's Hindman 1, ce½ nw 35-7s-17w, hfw 3180 ft; pb 3123½ ft. Graham et al's Fike 1, sw sw sw 9-9s-17w, td 3301 ft. Basin Oil Co's Baxa 1, ne ne ne 23-9s-17w, sd 2000 ft. Lester & Dean's Burtt 1, se se ne 29-10s-20w, fsg 3422 ft. Phillips Pet Co's Manquist 1, sw sw nw 9-9s-17w, ru.

RUSH COUNTY—S. A. Murphy et al's Roth 1, nw nw sw 21-16s-18w, ru.

RUSSELL COUNTY—Empire's Vaughn 1, sw sw sw 17-14s-14w, dr 2490 ft. Getty Inc. Baxter 1, se se ne 8-15s-15w, td 3365 ft, D & A.

SALINE COUNTY — Ryan Consolidated's Weurth 1, sw sw nw 28-14s-2w, fsg 1870 ft.

SCOTT COUNTY—C. R. Blackman et al's Nolan 1, nw nw ne 13-19s-33w, lcn abd.

SEDGWICK COUNTY—Cameron et al's Smith 1, sw se se 13-27s-2e, dr 2115 ft. Swearer et al's Thome 1, sw sw nw 19-28s-1w, rur. Roxanna Drlg Co et al's Woodman 1, sw nw sw 26-26s-1w, rot rig.

STAFFORD COUNTY—Empire's Jordan 1, sw sw nw 15-25s-14w, swabbing. Empire's O'Conner 1, ne ne ne 17-24s-15w, rust. Young et al's Murphy 1-A, se nw ne 32-21s-11w, fsg 1380 ft. Trigg & Vernon O & G Co's Andrea 1, se se se 4-23s-12w, brr.

SUMNER COUNTY—Wakefield & Mead Oil Co's Napp 1, sw sw nw 2-34s-5e, set 6-in csg 3161 ft. Westfall et al's Rogers 1, sw ne sw 35-31s-1w, dr 2375 ft.

TREGO COUNTY — Central Commercial's Burkett 1, csw 15-11s-22w, dr 4210 ft. Black Gold Oil Co's Allman 1, csw sw 34-14s-21w, dr 2300 ft.

WOODSON COUNTY—Reamer's Corn 1, ne ne ne 31-26s-15e, dr 1820 ft.

SOUTH LOUISIANA

ACADIA PARISH—H. E. Dalton's Setting 1, Trilby prospect, 17-9s-1w, sd 4047 ft. Humble's Nordyke 1, Ebenezer prospect, 23-10s-1e, dr shale 8695 ft.

CALCASIEU PARISH—D. & D. Oil Co.'s Lutcher Moore 1, nw of Starks, 1-8s-13w, dr shale 7385 ft.

CAMERON PARISH—Magnolia's Grey 1, Johnson Bayou prospect, 8-15s-14w, abn 7421 ft. Pure's State Mallard Bay 1, Mallard Bay prospect, 22-13s-3w, cutting and pulling 10,146 ft. Southern Oil Co.'s State Maritime 2, 15s-10w, dr shale 1498 ft. Union Sulphur's Hebert 1, Big Lake area, 18-12s-8w, dr shale 6439 ft.

EAST FELICIANA PARISH—Cavalier Oil Co.'s T. E. Mills 1, near Port Hudson, 58-4s-2w, dr sandy shale 5348 ft. Barnett Pet. Corp.'s Tullos 1, near Jackson, 34-2s-1w, dr lime 4715 ft.

EVANGELINE PARISH — Bel Cheney Springs Oil Co.'s Fee 1, 10-2s-1w, dr shale 1723 ft. Continental & Humble's Pardee Lbr. Co. 1, Reddell area, 18-4s-1w, woc 1510 ft. Louisiana Crusaders Oil Co.'s Hattie Hass 1, ne of Pine Prairie, 2-3s-1e, dr shale 6849 ft.

IBERIA PARISH — Texas Co.'s State 2, Fausse Point area, 35-11s-8e, testing 6550 ft. Jefferson Lake Oil Co.'s Lake Peigneur 414, Lake Peigneur prospect, 12s-5e, testing 6930 ft.

JEFFERSON PARISH—Triangle Oil Co.'s Carroll 1, 125-12s-11e, sd 2461 ft.

JEFFERSON DAVIS PARISH—Amerada-Stanolind's Calcasieu National Bank 1, China prospect, 28-7s-3w, repairing rig, 9139 ft. Shell's Sturdevant 1, South Roanoke prospect, 25-10s-4w, woc 8630 ft. Stanolind's United Life Insurance 1, Hayes prospect, 16-11s-5w, dr surface clay 72 ft.

LAFOURCHE PARISH — Fohs Oil Co.'s State Long Lake 1, 65-17s-19e, woc 40 ft. William Helis' City of New Orleans 1, Marchland prospect, 19-23s-23e, dr shale and lime 6303 ft.

PLAQUEMINES PARISH—Tide Water Associated Oil Co.'s Manhatten Fruit 2, Venice dome, 26-21s-30e, fsh 7252 ft. Gulf's State Bay Adams "PP" 1, in Bay Adams, 32-19s-28e, dr sandy shale 7223 ft.

ST. BERNARD PARISH—Gulf's Lake Lery 1, Lake Lery prospect, 28-14s-14e, dr shale 5276 ft. Southern Sulphur Co.'s State 2, Lake Borgne area, 38-14s-15e, dr shale 2288 ft.

ST. LANDRY PARISH—Shell's Boagni 1, ne of Cankton, 48-8s-4e, dk.

ST. MARTIN PARISH—Stanolind's Numa Patin 1, Anse La Butte, 46-9s-5e, dr hard sand 5806 ft. Texas Co.'s State Mongouloi 3, Lake Mongouloi prospect, 14-10s-9e, waiting on dk; same operator's St. Martin Land Co. 9, Henderson prospect, 21-8s-7e, dr shale and lime 8438 ft.

ST. MARY PARISH — Texas Co.'s State Bateman Bay 1, Morgan City prospect, 21-16s-12e, driving piling; same operator's State Wax Lake, Wax Lake prospect, 40-17s-9e, dr shale 10,982 ft.

TERREBONNE PARISH—Humble's Elender 1, Houma gas field, 23-19s-19e, dr sand and lignite 9426 ft.

VERMILION PARISH—Continental's Hebert 1, Abbeville prospect, 20-12s-3e, testing 10,374 ft.

NORTH LOUISIANA

BIENVILLE PARISH—Lide, Greer et al's J. D. Smelley 1, sw ne 13-16n-5w, elev 239 ft, base massive anhydrite 5640 ft, tested est 50 mil ft gas and spray distillate 7163-93 ft, tested est 30 mil ft gas 7205-40 ft, coring 7450 ft. McDowell et al's Locke 1, 9-15n-10w, dr 2340 ft. Texas-Seaboard Oil Co.'s McGee 1, 3-16n-6w, 7-in csg 7537 ft, tested gas after perforating csg at 7323-33 ft, at 7345-55 ft and 7448-62 ft, perf csg and tested est 2½ mil ft gas at 6665-95 ft in basal Glen Rose, td 8017 ft.

BOSSIER PARISH—Ark. La. Gas Co.'s Wilson 1, sw se sw 8-17n-11w, rur. Haynes Drlg Co.'s A. J. Murff 1, 35-17n-12w, dr 3085 ft. La. Pet. Corp.'s Edwards 1, 5-17n-11w, cemt 7-in csg on bottom, last 110 ft perforated, td 5184 ft. Triangle Drlg. Co.'s Skannal I-1, 22-17n-12w, si for gauge 5170 ft. United's Skannal H-1, 26-17n-12w, top Petitt 5120 ft, flowed 5 bbls per hour through ⅛ in choke, tub press 200 pounds, cas press 900 pounds, si for tankage, td 5144 ft. Freedman 1, 15-17n-12w, arr pb, td 5130 ft. Henderson 1, 36-17n-12w, dr 3703 ft.

CADDO PARISH—Fallon Oil Co.'s Cupples 1, 24-16n-13w, cemtd 10⅝ in csg 2000 ft, woc, td 4001 ft. Ferguson et al's Huckabay 1, 22-22n-16w, 8-in csg 1130 ft, tested dry 1137 ft, arr deepen. Gulf's E. P. Hatcher 1, 11--17n-15w, elev 269 ft, 7 in csg 8307 ft, running electrical tester, td 8994 ft. R. W. Norton's Payne 1, se se 27-23n-16w, sr 8438 ft.

CLAIBORNE PARISH—Max Hirsch et al's C. O. Ferguson 1, nw sw 29-22n-6w, dr 6095 ft.

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Lisbon Oil Co.'s J. W. Burgess 1, se ne 3-20n-5w, dr 3762 ft. Lyons & Neely's Patton 1, nw sw 36-21n-5w, dr 2905 ft. Oden & Evans' Patton 1, se se 36-21n-5w, elev 355 ft, top first anhydrite 3812 ft, dr 4064 ft anhydrite. Red Iron Drlg. Co.'s H. F. Patton 1, sw ne 36-21n-5w, 10 in csg 850 ft, dr 3087 ft shale; H. F. Patton 2, 36-21n-5w, lcn; T. E. Patton 1, 36-21n-5w, lcn; McDonald 1, 36-21n-5w, lcn. Standard of La.'s R. D. Baker 1, nw nw 27-19n-7w, 13-in csg 285 ft, dr 2465 ft. United's Warren Brown 1, se ne 1-19n-6w, dr 5654 ft. Rufus Simms 1, sw nw 32-20n-5w, si for gauge, td 5714 ft.

CATAHOULA PARISH—Balconies Oil Co.'s T. J. Chisum 1, 19-10n-8e, rur. Matheny & Schumacher's W. S. Peck 1, 40-10n-8e, mim.

DE SOTO PARISH—Sundby et al's Garland 1, se nw 7-14n-14w, dr 3625 ft, crystallized lime. Benedum & Trees Oil Co.'s Clifton 1, ne nw 33-13n-12w, 12¾ in csg 1010 ft, dr 2000 ft. Julian-Igoe Synd.'s H. Smith 1, se se 31-14n-15w, lcn. Sanders et al's Allison 1, 17-14n-13w, mim. Chamberlin et al's Lanier 1, 29-11n-11w, dk. Grady Vaughn et al's Sample 1, ne se 24-11n-14w, owdd 5955 ft. Pearl Oil Corp.'s Joyner 1, 28-11n-12w, cored sand, so 2887-90 ft, 8¼ in csg 2885 ft, td 2899 ft. Lee Oil Corp.'s Mansfield Pet. Co. 1, se se 13-10n-14w, dk. Grogan Oil Co.'s Ramsey 1, 36-11n-11w, sr 2812 ft.

GRANT PARISH — Tri-State Leasing & Dev. Co.'s Edenborn 1, ne se 13-7n-4w, 10-in csg 700 ft.

NATCHITOCHES PARISH — Lent et al's Locke 1, se sw 26-9n-9w, sd 30 ft. Robt. Keen's Moffitt 1, 19-10n-10w, rur.

RAPIDES PARISH—R. D. Webb's Brasher 1, 22-4n-2w, dr 2274 ft.

RICHLAND PARISH—Gulf's R. R. Rhymes 15, se se 32-17n-6e, elev 87 ft, dr 9676 ft, shale.

SABINE PARISH—Earl Fox's L. B. Blankenship 1, ne se nw 13-9n-12w, cored sand so & sg 3233-37 ft, tested est 15 mil ft gas, dr 3344 ft. Kirk-Greenway Co.'s Whitney Corp. 1, nw ne 8-9n-13w, straightening crooked hole 3000 ft. A. C. Scott's Bowman-Hicks 1, 23-9n-13w, owdd 2020 ft.

WEBSTER PARISH—Ohio Oil Co.'s S. T. D. Coyle 1, se sw 23-21n-10w, dr 5015 ft. Ohio's R. M. Coyle 2, se se 22-21n-10w, rur. A. H. Gray 1, Acct. 2, nw nw 26-21n-10w, top saturation 5521 ft, base 5530 ft, set 7-in csg, td 5540 ft; Hodges 2, nw sw 23-21n-10w, dr 5496 ft. United's C. V. Davis 2, nw nw 23-21n-10w, tested show 54 grav distillate and 3½ mil ft gas 8262-8300 ft, fsh job completed, hole clean, arr core, td 8502 ft. United's Mixon 1, 22-21n-10w, sd 8231 ft. Woodley Pet. Co.'s Gray B-4, ne ne 27-21n-10w, set 7-in csg 5524 ft, td 5595 ft. Standard of La.'s Fudicker 1, 2-17n-9w, top Travis Peak 6881 ft, setting 7-in csg at 5790 ft, td 7202 ft.

WINN PARISH—C. W. Cline's Collinsworth Hrs. 1, se se 14-10n-4w, dk and mir.

MISSISSIPPI

AMITE COUNTY — J. P. Wemple, Tr.'s Southern Forest Land Co. 1, sw sw 29-4n-2e, rur.

GRENADA COUNTY—H. T. Salter et al's Carpenter 1, nw se 5-21n-7e, arr re-build dk.

HARRISON COUNTY—Big Ridge Oil Co.'s Hingen 1, se se 13-7n-10w, co 2150 ft.

HINDS COUNTY—State of Mississippi's Fee 2, nw nw 25-6n-1e, elev 326.5 ft, dr 4850 ft, red shale and strks igneous material.

JONES COUNTY—Snow-Black Pet. Co.'s Cranford 1, s½ nw 29-7n-12w, setting 15-in surf csg.

KEMPER COUNTY—R. A. Keaton et al's Buckwalter Lbr. Co. 1, nec 6-10n-14e, dk.

LAMAR COUNTY—Sun Oil Co. et al's Mrs. K. Talley 1, se sw 28-4n-15w, spd cemtd 13⅜ in csg 244 ft.

SIMPSON COUNTY—Goodwill O&G Co.'s Berry 1, 33-2n-4e, rog.

YALABOUSHA COUNTY—G. M. Langston et al's W. C. Bryant 1, ne sw 21-24n-6e, dk.

MICHIGAN

ARENAC COUNTY—Mee & Wright's Yawkey 1, sec 28-18n-4e, sd 300 ft. Petroleum Corp.'s LaFaye 1, sec 17-18n-5e, sd 1600 ft.

GLADWIN COUNTY — Cryden Petroleum Corp.'s Gary 1, sec 34-19n-1w, rig. Gordon Oil Co.'s McClure 1, sec 25-19n-2w, lcn.

MONTCALM COUNTY — Chas. Weller's Herzog 1, sec 14-12n-8w, dr 1500 ft. R. E. Gallagher's Hayden 1, sec 25-11n-7w, sd 3115 ft.

OSCEOLA COUNTY — Dibble Brother's Townsend 1, sec 5-20n-7w, sd 3700 ft. Osceola Oil Co.'s Gregg 1, sec 22-18n-7w, lcn.

WASTHENAW COUNTY — Lee Brown's Kehrl 1, sec 12-1s-7e, dr 3600 ft. Ypsilanti Development Co.'s Vorhees 1, sec 32-2s-7e, dr 1510 ft.

WAYNE COUNTY—Darke Brother's Truesdel 1, sec 25-2s-8e, dr 800 ft. Wolverine Driller's Gardulski 1, sec 19-2s-9e, sd 700 ft. Pontchartrain Oil Co.'s Boynton 1, sec 27-4s-8e, dr 1900 ft. Huron River Oil Co.'s Schfler 1, sec 26-3s-8e, sd 1200 ft.

MISCELLANEOUS COUNTIES: Cass—L. T. Barber's Beebe 1, sec 3-5s-15w, lcn. Clare—Wittmer & McClanahan Oil Co.'s Musgrove Sales 1, sec 3-18n-5w, dr 2000 ft. Gladwin—McClanahan Oil Co.'s Avery 1, sec 10-17n-1e, rig. Hillsdale—Huges Heinig's Daley 1, sec 10-7s-4w, dr 1800 ft. Ionia—Boston Oil Co.'s Marshall 1, sec 6-8n-6w, lcn. Isabella—H. E. Bell's Delo 1, sec 17-13n-5w, sd, hf sw 3740 ft. Socony-Vacuum's Murphy 1, c e½ se ne, sec 6-16n-3w, mim. Kent—Central Michigan's Fletcher 1, sec 25-7n-10w, sd 1400 ft. Lake—R. B. Tamblyn's Cashion 1, sec 25-18n-13w, dr 2700 ft. Tuscola—Smith Petroleum Co.'s Brink 1, sec 23-14n-7e, dr 2730 ft.

MONTANA

CARBON COUNTY — Bailey-Round Butte Oil Co.'s 2, w ne se 3-6s-23e, fsg 1260 ft with 8 in cas at 1250 ft.

PETROLEUM COUNTY—H. Clark Rowland et al's Kalispell 1, ne ne se 31-14n-25e, dr 711 ft.

PHILLIPS COUNTY — R. G. Parrent's Hartman 1, cnw se 12-24n-25e, dr 885 ft.

NEW MEXICO

LEA COUNTY — Anderson-Prichard Oil Corp.'s E. J. Wells-Conoco 1, c se se 5-25s-37e, mim. Jim Brown & Reynolds' Parcell-Conoco 1, c nw se 8-21s-36e, elev 3573 ft, top anhydrite 1616 ft, base salt 2820 ft, salt water 3575-85 ft, cem 5½ in cas 4200 ft, lime pay 4371-4373 ft, testing. Amon G. Carter et al's E. M. Elliott 2, c ne nw 22-22s-37e, elev 3375 ft, fsh tools, td 3622 ft. J. C. Clower et al's W. H. Turner 2, sw sw se 29-21s-37e, dr 615 ft. Continental Oil Co. et al's Danciger 1, c nw ne 8-23s-36e, dr 575 ft; J. M. Skaggs 1, c ne se 24-20s-37e, elev 3555 ft, dr 3268 ft. Culbertson, Erwin & Stovall's J. R. Stuart-Repollo 2, nw se se 10-25s-37e, elev 3108 ft, tested 20,000,000 ft gas at 3380 ft, run 5½ in cas to cut off gas; Stuart-Repollo 3, ne se sw 10-25s-37e, elev 3111 ft, lcn. El Paso Nat'l Gas Co.'s W. H. Harrison 1, c nw nw 7-25s-37e, elev 3181 ft, td 3558 ft, used 3000 gals acid, testing; Harrison 2, c nw nw 29-24s-37e, elev 3290 ft, completed 30,000,000 ft gas 3650 ft; Geo. W. Toby 1, c se se 12-24s-36e, elev 3322 ft, complete 24,600,000 ft gas 3685 ft. Empire O&R Co.'s R. L.

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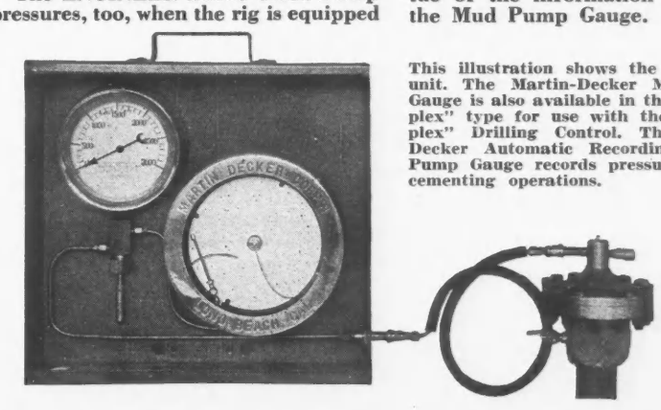

This illustration shows the individual unit. The Martin-Decker Mud Pump Gauge is also available in the "Quintuplex" type for use with the "Quintuplex" Drilling Control. The Martin-Decker Automatic Recording Cement Pump Gauge records pressures during cementing operations.

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Brunson 1, nw nw se 4-22s-37e, elev 3446 ft, top anhydrite 1140 ft, complete, used 2000 gals, pay 3628-3750 ft, flowed 134 bbls oil 7 hrs. A. R. Eppenauer et al's F. B. Stuart-Amerada 1, ne ne ne 22-25s-37e, elev 3082 ft, top anhydrite 1000 ft, top salt 1200 ft, dr by junk, td 2905 ft. J. E. Farrell & Co.'s E. W. Walden-Amerada 1-A, c sw nw 15-22s-37e, elev 3407 ft, rust, td 3551 ft; Walden-Amerada 1-C, c sw sw 15-22s-37e, elev 3385 ft, td 3686 ft, killed o&g flow to run tubing. Geo. F. Getty Oil Co.'s Etz-Conoco 1, c ne ne 12-21s-32e, elev 3822 ft, top anhydrite 1585 ft, salt series 1730-3135 ft, top lime 3175 ft, dry and abd in sul w 3515-17 ft. Gulf Oil Corp.'s C. L. Hardy 1, c se sw 20-21s-37e, elev 3492 ft, dk; H. T. Mattern, 1-B, ne ne se30-21s-37e, mim. Herschbach Drlg. Co.'s Seth Alston-Conoco 1, c sw ne 31-17s-37e, rur. Harry W. Leonard et al's B. T. Lanehart 3, c ne nw 21-25s-37e, elev 3081 ft, lcn. Magnolia Pet. Co.'s Will Cary 2, c ne sw 21-22s-37e, elev 3359 ft, top lime 2765 ft, cem 7-in cas 3350 ft; State 1-G, nw nw ne 24-17s-34e, elev 4019 ft, top anhydrite 1700 ft, top lime 4378 ft, sul w 4902-4905 ft, pb to 4770 ft for shot. Maljamar O&G Corp.'s Baish 8, c sw ne 21-17s-32e, elev 4022 ft, dr 2190 ft. Ohio Oil Co.'s J. W. Grizzell 1, c sw se 5-22s-37e, mim. N. G. Penrose & Rowan-Nichols Oil Co.'s Cary-Humble 3, c se nw 22-22s-37e, elev 3364 ft, co 1150 ft. J. L. Perry et al's E. M. Elliott 1, se se se 19-21s-37e, elev 3496 ft, rig. Plains Prod. Co. et al's J. A. E. Knight-Humble 4, c sw sw 22-24s-37e, elev 3225 ft, dr 3025 ft. Repollo Oil Co.'s Fowler Hair 1, nw nw nw 9-24s-37e, elev 3267 ft, dr 1310 ft; Robt. Jamison 2, sw sw nw 22-24s-37e, elev 3236 ft, flowed 45 bbls oil, dr 3446 ft; R. L. Mosley 1, nw sw se 34-24s-37e, dr 1110 ft. Samedan Oil Corp.'s S. B. Hughes 3, c ne se 4-23s-37e, elev 3311 ft, set cas 630 ft. Shell Pet. Corp.'s J. F. Black 2, c sw se 21-24s-37e, elev 3219 ft, dr 2510 ft. Skelly Oil Co.'s Ellen Sims 2, c sw ne 3-23s-37e, elev 3301 ft, td 3405 ft, dr out cem plugs 2960 ft; J. V. Baker 4, elev 3341 ft, c sw nw 27-22s-37e, dr 1475 ft; R. R. Sims 2, c ne sw 3-23s-37e, elev 3298 ft, show o&g, dr 3510 ft; R. R. Sims 1-C, c se sw, 3-23s-37e, elev 3297 ft, td 3388 ft, dr by junk. Stanolind O&G Co.'s C. Myers 1, c ne sw 22-24s-37e, elev 3256 ft, rust, td 3372 ft. Mac Stauffer et al's L. E. Grizzell-I.T.I.O. 1, c nw ne 8-22s-37e elev 3425 ft, dr 950 ft. W. H. Street et al's Wood-Humble 1, near c se ne 22-22s-37e, elev 3355 ft, flowed 123 bbls oil 24 hrs, td 3654 ft, run tubing. Sun Oil Co.'s I. R. Stuart 2, c sw ne 15-25s-37e, rur. The Texas Co.'s J. P. Alexander 1, c lot 14, 5-21s-37e, elev 3490 ft, dr 3430 ft; Jas. F. Black 2, c ne sw 21-24s-37e, elev 3231 ft, dr 1325 ft. Tide Water Associated Oil Co.'s Coates 1-B, c nw nw 21-25s-37e, elev 3073 ft, pb fr 3077 ft to 3032 ft, shot 160 qts 2917-3027 ft, flowed 81 bbls, testing; R. M. Marshall 1, c sw ne 13-21s-36e, mim. Ann Walden 2, c sw ne 21-22s-37e, elev 3360 ft, dr 3060 ft.

ROOSEVELT COUNTY—Clovis Dev. Co.'s S. Smith 1, c se ne 17-2s-30e, elev 4597 ft, dr 2310 ft. Franklin Oil Corp. et al's Rual Giphant 1, nw nw nw 28-3n-30e, elev 4458 ft, sd 5155 ft.

OKLAHOMA

ATOKA COUNTY—A. J. Sander's Redden 3, se sw sw 19-1n-5e, sd 1260 ft.

BECKHAM COUNTY—Carter's Garrett 1, ne ne ne 11-17n-25w, dr 963 ft. Mid-American Oil Co's Biscoe 1-A, sw sw sw 28-8n-22w, dr 75 feet.

CADDO COUNTY—Clyde Becker et al's Pharris 1, cse se nw 24-6n-12w, c & p.

CARTER COUNTY—Lyle-Wham Dev Co's Jackson 1, cne sw sw 26-5s-1e, sd for csg. Helmerich & Payne's Wolverton 1, se ne nw 21-3s-1w, lcn.

CHOCTAW COUNTY—Cooper & Branstetter's Bell 1, cnw ne 29-6s-17e, td 1151 ft; rust.

CLEVELAND COUNTY — Helmerich & Payne's Glenn 1, cnw ne 6-8n-1w, td 7484 ft, D & A.

COMANCHE COUNTY — Frank Scott's Kuntz 1-A, cse ne se 21-4n-11w, dr 2210 ft. C. V. Morris' Young 1, se ne se 24-3n-10w, td 822 ft, ur 8¼-in csg.

COTTON COUNTY—Phillips' Moore 1, csw sw ne 6-5s-12w, td 2183 ft, D & A.

CREEK COUNTY—J. E. Crosbie & Sinclair Prairie's Bailey 1, ne nw nw 28-16n-8e, td 2430 ft, run 8-in csg. W. J. Sherry's Childers 1, sw sw nw 2-15n-7e, spd 380 ft. M. W. Mosier et al's Holcomb 1, se sw ne 19-18n-8e, dr 2905 ft.

GARFIELD COUNTY—Arab Oil Co's Harkendorf 1, ne ne ne 34-20n-3w, dr 2600 ft.

GRADY COUNTY—R. E. Johnson et al's Thomas 1, sw se sw 18-5n-7e, mir. Western White Lily Oil Co's Stover 1, cse sw nw 33-3n-7w, der tmbrs.

HARMON COUNTY—Lioalko Trust Ltd. Crosnoe 1, se se sw 14-3n-25w, dr 3222 ft.

HUGHES COUNTY—Carson Oil Co's Lyter 1, ne nw sw 31-8n-12e, dr 3750 ft. C. J. Wrightsman's Diamond 1, ne ne se 33-9n-9e, td 3475 ft, D & A. Mid West Oil Co's Turner-Lucas 1, cse nw 13-9n-9e, SI. Wrightman's Diamond 1-A, se ne ne se 33-9n-9e, dr 805 ft.

JEFFERSON COUNTY—Buffalo Oil Co's Crown-Over 1, cse se nw 21-6s-6w, fsg 1148 ft. Massad & Swansberger's Barrett 1, ne se se 14-6s-6w, td 1530 ft, sd. Olson, Heenan & Coe Oil Co's Rose 1, csw sw 1-5s-5w, pits.

JOHNSTON COUNTY—Patton et al's McCrummens 1, sw sw ne 16-1s-6e, dr 912 ft.

KAY COUNTY—G. A. Brown et al's Harris 1-A, sw sw ne 14-25n-1e, sd. Ritz O & G Co's State 1, nw ne sw 16-29n-2w, dr 4100 ft.

KIOWA COUNTY—McWherter & Francis' Padgett 1, ne nw se 3-5n-17w, sd 610 ft. Argus Pet Co's Osbourne 1, nw nw ne 9-7n-16w, fsg 1225 ft. Rush C. Roberts' Funkhouser 1, se nw nw 25-7n-17w, lcn abd.

LINCOLN COUNTY — Mid-Continent Pet Corp's Logan 1, ne ne se 31-11n-5e, surv hole. Anderson-Prichard's Colon 1, nw se sw 28-17n-4e, dr 4146 ft.

LOGAN COUNTY — Harry Blackstock's Prince 1, se ne sw 11-17n-3w, dr 5047 ft. Helmerich & Payne et al's Ruck 1, cne se 9-19n-2w, rig.

LOVE COUNTY—Sinclair Prairie's Stockton 1, se se sw 26-6s-2w, dr out 6927 ft. Sadson-Wells-Pierson's Key 1, cse se nw 6-8s-1w, lcn.

MARSHALL COUNTY—Stewart & Taylor's Chestnut 1, ne ne ne 23-8s-5e, ur 5 3/16-in csg, 803 ft.

MURRAY COUNTY—Russell's Fee 1, se nw se 9-2s-3e, dr up ur lugs. Power Oil Co et al's Lancaster Trust Co 1, csw ne 10-1s-2e, td 3438 ft, cond hole.

OSAGE COUNTY—Norbla Oil Co's No. 1, ne ne se 13-23n-6e, dr 705 ft.

PAWNEE COUNTY — Forest Dev Co's Greisel 1, cnw ne 21-21n-5e, dr 3020 ft. Forest's Markham 1, sw ne se 10-21n-5e, rig.

PAYNE COUNTY—H. F. Young's Jenkins 1, se ne se 4-17n-3e, dr 4595 ft.

PITTSBURG COUNTY—Okla Dist Co's Beeler 1, ne ne sw 7-7n-14e, dr 5033 ft.

PONTOTOC COUNTY — E. H. Moore's Must 1, sw ne se 33-2n-7e, td 4183 ft; no flow; to test.

POTTAWATOMIE COUNTY — Champlin Ref Co's Buckler 1, se ne ne 7-6n-4e, rig. B. H. Rowlett et al's Burson 1, sw sw ne 21-9n-4e, lcn.

PUSHMATAHA COUNTY—Erle Halliburton et al's Bogwell 1, sw ne ne 30-3s-15e, sd 940 ft.

SEMINOLE COUNTY—Hudson et al's Tanyan 1, se se sw 32-10n-7e, rig. Sinclair Prairie's Rossanna 1, nw nw sw 28-10n-8e, dr 2725 ft. Papoose Oil Co et al's Yarber 1, sw sw nw 15-11n-8e, dr 900 ft. Amerada & Stanolind's Face 1-A, sw sw sw 12-9n-7e, bldg rig.

STEPHENS COUNTY — Coline Oil Co's Johnson 1, csw se nw 1-2n-8w, sdo 6500 ft. Edward's Frederick 1, ne se nw 31-2n-8w, run 6⅝-in csg; to test. Carter's Harley 1, cne ne 24-2s-4w, dr 2262 ft. Wm. Angle et al's Posey 1, cnw nw 8-1n-8w, dr 3050 ft. Helmerich & Payne's Graham 1, csw sw ne 12-1n-5w, dr 2950 ft. Ed Parson's Olson 1, csw sw 21-2n-8w, td 7002 ft, to test. Angle & Angle's Irvine 1, csw sw ne 24-1n-7w, lcn. B. F. Lundy's Calmes 1, cnw sw se 35-1n-4w, rur. Penn State Oil Co.'s Cole 1, cw½ sw nw 21-2n-8w, lcn.

TEXAS COUNTY—Cabot Carbon Co's Castro 1, cne 19-3n-17ecm, dr 1215 ft. Missouri Valley Gas Corp's Fitzgerald 1, C Section 17-6n-14ecm, dg C & P.

TILLMAN COUNTY—I.T.I.O. Co's Hatler 1, csw ne 32-2s-17w, pb 4525 ft. Skinner's Oliver 1, se se nw 22-1s-15w, sdo 1378 ft.

EAST TEXAS

ANDERSON COUNTY—Tom F. Hunter, Jack W. Frazier and American Liberty Oil Co.'s G. E. Gage 1 (160-ac), C. B. Gilbert sur, 2 mi se Blackfoot, elev 384 ft, Pecan chalk 2850-3004 ft, Austin chalk 3980-4376 ft, top Woodbine 4782 ft, top Red Beds 4989 ft, top lower sand 5000 ft, dr 5500 ft. Roeser-Pendleton, Inc.'s V. W. Bowyer 3 (200-ac), E. Ritter sur, Cayuga field Trinity test, dk. Tide Water Associated-Seaboard Oil Corp.'s Monnig Bros. 7 (3806.82-ac), Simon Sanchez sur No. 1-11, Long Lake field Trinity test, elev 233 ft, Pecan chalk 3545-3745 ft, Austin chalk 4687-4957 ft, top Woodbine sand 5273 ft, top Georgetown lime 5904 ft, dr broken lime 6985 ft.

BOWIE COUNTY—Ferguson & Hill's A. Y. Breckenridge 1 (412-ac), Nancy Dycus sur, 4 mi w Texarkana, top Nacatoch 740 ft, top Annona chalk 1308 ft, top Blossom sand 2063 ft, tested trace oil with sw 2063-80 ft, td 2160 ft. Sutton & Hawkins' D. L. McDuffie 1 (336-ac), John Ball sur, 3 mi se New Boston, elev 333 ft, top Annona chalk 1472 ft, dr 3695 ft.

CHEROKEE COUNTY—Joe Sanders et al's J. W. Ware 1, J. Trimble sur, dk.

DALLAS COUNTY—Mauldin Oil Co.'s W. E. Howell 1 (107.7-ac), S. Layton sur, rig.

DELTA COUNTY—F. J. Estes et al's W. S. McGee 1 (207-ac), J. G. Oliver sur, 2 mi sw Klondike, elev 449 ft, top Georgetown lime 3305 ft, dr 3990 ft.

FALLS COUNTY—J. Edward Mills et al's Sam Grucholski 1 (40-ac), Dennis Herold League, 5 mi sw Kosse, elev 521 ft, top Edwards lime 3867 ft, top upper Glen Rose 4074 ft, td 4659 ft, re-cem surface pipe.

FREESTONE COUNTY—C. A. Everts et al's O. W. Killam 1 (840-ac), John Robbins sur, 6½ mi se Fairfield, Red Lake area, elev 368 ft, Pecan chalk 3253-3468 ft, Austin chalk 4336-4785 ft, top Woodbine 5153-58 ft, dry and abd.

GRAYSON COUNTY—Olson Drlg. Co., Jas. H. Gardner, Broswood Oil Co. et al's D. R. Utiger 1 (160-ac), P. P. Cady sur, 5 mi nw Denison, Preston Anticline, elev 722 ft, base Trinity 930 ft, top Woodford chert 955 ft, top Viola cherty-lime 1570 ft, top Stringtown shale 1854 ft, lime 2415-2575 ft, Blakely sand and dolomite 3783-3941 ft, dr Mazarn shale 4443 ft.

HENDERSON COUNTY — Humble, Tide Water Associated and Seaboard Oil Corp.'s McElreath-Suggett 1-C (149-ac), W. P. Wyche sur, 1½ mi nw Opelika, Trinity test, dr 1015 ft. E. B. LaRue et al's Amicable Life Ins. Co. 1 (1851-ac), Phillip Jackson sur, 2½ mi w LaRue, Trinity test on LaRue salt dome, lcn.

HOPKINS COUNTY—Empire O&R Co.'s J. E. Worsham 3 (149.36-ac), A. O. Wetmore sur, elev 430 ft, top Woodbine 3720 ft, top Georgetown 3750 ft, top Paluxy series 4443 ft, pay 4483-4533 ft, flowed 5 bbls oil per hr, to dd; Worsham 4, dk. Walter L. Goldston-Big State Oil Corp.'s H. J. Smith 4 (450-ac), J. A. Craft sur, elev 442 ft, top Paluxy 4484 ft, oil sand 4506-4538 ft, testing; Smith 5, rig. D. S. Hager and W. P. Luse's J. G. Reynolds 3 (200-ac), A. O. Wetmore sur, elev 418 ft, top Woodbine 3660 ft, top Georgetown 4260 ft, coring 4500 ft. Hager-Luse and Russ Pet. Co.'s Ronney Long 1 (39.86-ac), Wetmore sur, elev 444 ft, cut fault between 4320-4330 ft, top Georgetown 4330 ft, Paluxy pay 4418-4517 ft, td 4518 ft in shale, flowed 128 bbls oil first hr via cas and 670 bbls per hr via tubing. F. D. Jones Drlg. Co. et al's Mrs. S. B. Pierce-Gulf 4 (300-ac), J. A. Craft sur, elev 438 ft, Paluxy pay 4434-4490 ft, complete, flowed 65 bbls per hr via tubing; Pierce-Gulf 8, dr 3896 ft; Pierce-Gulf 10, top Pecan chalk 1520 ft, dr 4183 ft. Russ Pet. Co. & W. P. Luse's S. B. Pierce 1 (97-ac), Craft sur, dk up and sd. Shell's J. G. Reynolds 1 (200-ac), A. O. Wetmore sur, elev 424 ft, top Paluxy series 4465 ft, pay 4517-4541 ft, flowed 24 bbls per hr, testing; Reynolds 2, rig.

HOUSTON COUNTY — American Liberty Oil Co. et al's J. A. Bean 1 (61.02-ac), Green Evans sur, nw Grapeland, elev 489 ft, top broken Pecan chalk 4623 ft, base chalk 4899 ft, Austin chalk 5614-5938 ft, dr 5995 ft. A. D. Hudspeth and Sunray Oil Co.'s A. B. Spence 1 (291.2-ac), Collin Aldrich sur, 2 mi sw Grapeland, elev 293 ft, Pecan chalk 4660-4962 ft, coring 6035 ft. Hunt Oil Co.-Shell Pet. Corp.'s J. E. Elliott 1 (200-ac), J. M. Procella sur, 6 mi ne Grapeland, rig. E. R. Mount, Branch et al's Dr. P. S. Griffiths 1 (136-ac), Frank Johnson sur, 3 mi sw Crockett, sd 1740 ft. Ridgeway and Jackson's H. F. Moore 2 (53-ac), H. Mester sur, 2 mi se Crockett, dk.

HUNT COUNTY—Penn Oil Corp., Elmer S. & Fox Wood's A. B. Parrish 1 (200-ac), Nancy Danley sur, 7 mi ne Lone Oak, dk. Superior Oil Co. (Cal.), Moncrief-Showers, Inc., Ed. Hyde & W. L. Pickens' P. B. Paul 1 (160-ac), Mary Latham sur, 5 mi ne Quinlan, elev 489 ft, top Washita 3425 ft, top Georgetown 3596 ft. Fredericksburg lime 3979-4010 ft, top Goodland lime 4231 ft, top Paluxy series 4237 ft, first stringer anhydrite 5190-5217 ft, massive anhydrite 5339-5450 ft, top Red Beds 5470 ft, dr 6070 ft. The Texola Land Corp.'s J. M. Goin 1 (250-ac), Jas. Merrick sur, 2 mi sw Wolfe City, sp and sd.

KAUFMAN COUNTY—J. M. Scott and J. B. Woodside's Wood & Temple Nash 1 (80-ac), Juan Cortez sur, 1 mi e Scurry, lcn.

LAMAR COUNTY—H. Salmon, Lowery & Cutler's E. C. Porter 1 (30-ac), Thos. King sur, 3 mi ne Chicota, elev 421 ft, Woodbine series 168-242 ft, top Georgetown lime 354 ft, sd 2500 ft.

LEON COUNTY—H. M. Ogg et al's O. Wiley 1, E. Devinney sur, 1 mi w Buffalo, dk.

LIMESTONE COUNTY—Pure Oil Co.'s W. B. Kendrick 16 (96-ac), Pedro Varella sur, 3 mi w Mexia, Mexia field Trinity test, rur. A. W. Phillips, J. Johnson et al's E. M. Speight 1 (136½-ac), M. Herrin & Pedro Varella sur, 4 mi ne Groesbeck, elev 415 ft, Pecan chalk 2450-2520 ft, Austin chalk 2720-3003 ft, sd 3695 ft.

RAINS COUNTY—Humble's O. L. J. Easter 1 (39¾-ac), R. Hotchkiss sur, 4½ mi e Emory, elev 438 ft, top Woodbine 4225 ft, top Washita 4970 ft, top Georgeotwn 5003 ft, top Paluxy series 6079 ft, top Glen Rose lime 6347 ft, top anhydrite 6985 ft, preparing to abd, coring 8465 ft.

RED RIVER COUNTY — Carpenter Oil Corp.'s R. E. Anderson 1 (100-ac), S. W. Sims sur, 3 mi n Clarksville, elev 459 ft, top Red Beds 1250 ft, top Paluxy series 1845 ft, td 2018 ft, co to deepen; J. M. Roberts 1 (100-ac), John Ware sur, 10 mi ne Clarksville, oil

saturated sand in top Paluxy 1135-41 ft, salt water 1141-49 ft, coring 1155 ft. Roy I. Carter Drlg. Co. et al's J. A. Tutt 1 (40-ac), Dennis Harty sur, 2 mi s Avery, elev 440 ft sd. Dale Sneed, R. H. Manning & Texfornia Co.'s Hooker-Hughes 1 (80-ac), MEP&P Ry. sur No. 642, 6 mi sw Lydia, elev 297 ft, Pecan chalk 995-1302 ft, top Austin chalk 2018 ft, sd 2720 ft.

ROBERTSON COUNTY—J. Edward Mills et al's Tony Congelosi 1-A (75-ac), Geo. A. Nixon sur, 3 mi sw Hearne, rig.

TITUS COUNTY—J. Z. Werby et al's Sam Williams-Strutton 1 (40-ac), MEP&P Ry. sur, Talco area, sub-Trinity test, elev 341 ft, top Georgetown lime 3505 ft, top Paluxy series 4275 ft, sw at 4498-4510 ft, top anhydrite 5434 ft, dr anhydrite 5595 ft. J. V. McMahon, Geo. H. McIntyre et al's J. B. Stevens, Jr. 1 (777½-ac), J. Muechen sur, 7 mi sw Mount Pleasant, elev 349 ft, Pecan chalk 2290-2600 ft, td 5051 ft, dr by junk 4750 ft.

VAN ZANDT COUNTY—American Liberty Oil Co.-Geo. Greer et al's J. A. Freeman 1 (92½-ac), John Walling sur, se edge Van field, elev 515 ft, Pecan chalk 1842-1946 ft, Austin chalk 2718-2936 ft, top Woodbine series 3160 ft, top Georgetown lime 3835 ft, top Paluxy series 4657 ft, tested salt water, td 4991 ft, dry and abd. Humble's L. K. Riggs 1 (26-ac), Wm. Daniel sur, ne edge Van field, dk. Stroud & E. N. Lowe's P. L. McNeill 1 (104-ac), J. W. Guest sur, 4 mi n Ben Wheeler, elev 510 ft, sp and sd.

EAST TEXAS BORDER COUNTIES

CASS COUNTY—G. H. Chamblee's Collett Hrs. 1, J. S. Smith sur, lcn.

HARRISON COUNTY—Potsam Oil Co.'s Zion Douglas 2, S. Fields sur, spd dr 1700 ft. H. H. Alvord's Flannagan 1, L. Womack sur, rur. Kennedy & Batchelor's Lane & Greer 1, J. M. Baker sur, claim so, cemtd 5¾ in csg, td 2336 ft (Tokio).

MARION COUNTY—Ark. La. Gas Co.'s W. S. Ford 1, Chas. Grayson sur, elev 332 ft, top massive anhydrite 5588 ft ,top Hill 5971 ft, top Gloyd 6085 ft, cemtd 7-in csg on bottom at 6351 ft in black shale, perf csg and testing. Laura McIntosh 1, Wm. Edmondson sur, elev 272 ft, top Nacatosh 1870 ft, dr 3797 ft; George 1, W. R. Myers sur, lcn. Dunn & Fisher's Susie Chatten 1, L. S. McCoy sur, dr 1790 ft. Holcomb, Thomasson et al's Lizzie Henderson 1, R. Bennington sur, re-testing with fluid swabbed to within 800 ft of bottom, flowing intermittently, td 6026 ft, old td 6408 ft. Seymore Oil Co.'s Lucas 1, A. Costleberry sur, dk. A. T. Freet et al's G. C. Bonham 1, Robt. Potter sur, dk.

JEFFERSON TOWNSITE—T. J. & A. S. Harvey's Fee 1, to 4 blocks 123 and 127, lcns. M. C. George's R. Lemmon 1, block 179, lcn. R. W. King's E. W. King 1, block 99, lcn. H. Hall's C. Hussey Est. 1, S. Smith sur, lcn. W. H. Wurtsbaugh's Jefferson and N. W. Ry. Co. 1 to 9, inclusive, R. Bennington sur, lcns.

PANOLA COUNTY—Magnolia Pet. Co.'s E. A. Hull 2, Thos. Applewhite sur (3400 ft se of Hull 1, a small gasser), mim. Motex Oil Co.'s J. M. Furrh 1, Thos. Alstone sur, arr deepen 5036 ft. Logansport P. L. Co.'s Rushing 1, Mannan Smith sur, co to deepen 2715 ft. Danciger O&R Co.'s J. W. Tatum 1, Alfred Bissell sur, mir. R. H. Dearing et al's Wooten Est. 1, Winny Mann sur, dk.

SHELBY COUNTY—H. A. Stebbinger et al's Pickering Lbr. Co. 2, A. Hansen sur, claim gas blowing, coring 4920 ft, hd crystallized lime.

SOUTH TEXAS

ARANSAS COUNTY—Barnsdall Oil Co.'s 1-A, Wm. Lewis survey dr 300 ft. W. J. Collins and Broughton Wilkerson's McCampbell Ranch 1, blk 10, McCampbell subd, McCampbell area, sd 1550 ft.

ATASCOSA COUNTY—Frontier Oil Co.'s D and A Oppenheimer 1, 193.4-ac tr, Sharp sur No. 518, td 2770 ft, pb 2670 ft, testing. Heirholzer Bros.' Fee 1, J. Pointevant sur No. 5, sd 509 ft. Helvetia Oil Co.'s Susie Pratt 2, 176-ac tr, F. de la Garza sur, top serpentine 3085 ft, perf liner 3150-3208 ft, milling after setting new whipstock. L. G. Priest, Tr.'s Sanders 1, 117.61-ac tr, J. P. Garman sur No. 1189, sd 2600 ft. R. J. Roberts' J. M. Elder 1, Dan Brewster sur No. 190, dr 1125 ft.

BANDERA COUNTY—A. T. Crane et al's R. B. Watson 1, A. C. Curver sur No. 72, fsh 2035 ft.

BEE COUNTY—W. C. McBride, Inc.'s Brown & Hanson, H. Harrell sur A-501, dr 2650 ft. Dirks Bros.' Tom Strauch 1, sec 19, Chittem Ranch subd, mim. J. R. Dougherty et al's Laura E. Weiss 1, 760-ac lease J. M. Uranga gr, coring 3120 ft. Two Rivers Oil Co.'s Martzendorf 1, center lot 6, A. Hartzendorf subd, G. A. Kerr sur, td 3909 ft, swabbed little oil after perforating 3649-57 ft, abn.

BEXAR COUNTY—Albert Chmel, Theresa McIntosh 1, J. W. Garrity sur No. 19, td 790 ft, reamed to bottom, prep to dd. J. H. Devine et al, Joe Meholski, 100-ac tr, Jose Maria Bustillo sur, abnd. J. H. Devine et al's Joe Miholski 1-A, 100-ac tr, Jose M. Bustillo sur 29, dr 40 ft. J. K. Oil Co.'s Bilhartz 1, 382-ac tr, F. Rolen sur 48, wor 40 ft. P. N. McCullough's A. W. Bitter 1, 330-ac lse, Jose M. Bairera sur 58, dv 290 ft. L. D. Ormsby's T. Baker 1, 386-ac tr, Jose M. Baerrera sur, td 895 ft, sg 681-84 ft, set 6⅝-in 735 ft, tested gas, prep dd. Woodward, Hardie and Herrold's Herman Sons 1, 2019-ac tr, Henry Pace league, sur 37, tr 9, Swearingen, Cassin and Tayloe subd, fsh 1720 feet.

BROOKS COUNTY—Texas Gulf Prod. Co.'s T. S. Proctor 1, blk 2, sec. 20 Los Olmos & Loma Blanca sur, set 13⅜ in cas 1172 ft.

CALDWELL COUNTY—Brown Drlg. Co.'s G. M. Blackwell 1, John Roe sur, td 2191 ft, top Edwards 2346 ft, comp on pump 15 bbls. G. A. McDonald's Trammel 1, 113-ac lse, H. Hunter sur, chalk 1990 ft, td 2019 ft, setting casing. McKenzie's J. M. Pierce 1, S. Seal league, stuck ds 1980 ft. Millican & Norman's Talbert 1, J. Henry sur, lcn. Mrs. E. B. Whittington et al's Sam McMahan 1, James Pinchback sur, 50-ac lse, td 2060 ft, chalk 2028 ft, setting casing 2055 ft. R. George Young, Tr's Lena Schmidt 1, W. C. Williams 1/3 league, td 1362 ft in chalk, 5 in casing 1345 ft, dr plugs.

CAMERON COUNTY—Stapper Pet. Corp.'s Port Isabell I.R.R. Company subd, Espiritu Santo gr, sh 29, set 13 in 1460 ft, laying water line.

DEWITT COUNTY — Southwestern Dev. Synd's W. L. C. Poetter 1, 591-ac tr, Obid Marshall sur, top Cockfield 3184 ft, sand 4220-49 ft, complete 5½ barrels per hour ¼ in choke. George B. White et al's W. L. C. Poetter 4, 591-ac tr, W. C. Broon sur, ru.

DUVAL COUNTY—Argo Oil Co. and John Cloptn's Smith-Corkill 2, sur 498, Lower Gov't Wells sand 2775-81 ft, tested saltwater will plug back to perf sand 2670-88 ft, showing for small well on pump, 27.1 gravity oil. A. J. Brinkoters' State 1, sur 215, abnd 2700 ft; P. Garza de Rodriguez 1, Sur 212, lcn. Frank Gravis' F. Vaello Fuig 1, 330-ac lse out of 1760.73-ac tr, Andres Garciz heirs, mir. C. K. Gravis Jr.'s Christian Holzapfel 1, J. Poitevent sur 44, dr

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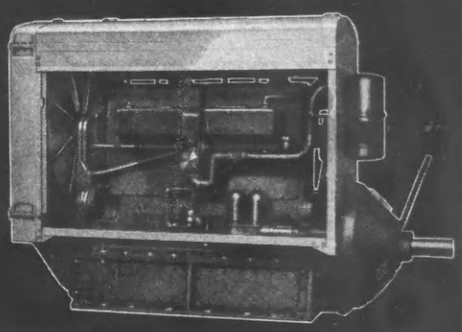

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WAUKESHA ENGINES

550 ft. Hiawatha O & G Co.'s George Herberger 1, sec 14, Ball Ranch subd, Santos Flores Agua Poquita Gr, dr 4060 ft. Alfred O. Oskness et al (Miller) 1, sec 24, Ball Ranch subd Santos Flores Agua Poquita Gr, dr 3590 ft. Humble's Sevier 1, NEc J. Harres sur 5, dr 3583 ft. Magnolia's A. L. Labbe 1, sec 1, H. & H. RR., dst 2904-19 ft, 10 min, 290 ft pipe line oil, 3/8 in choke, 7 in casing 2904, swabbed dry through perf 2904-07 ft, plug back 2908 ft, comp 35 bbls. Rio Bravo and Coates' W. R. Peters 2-C, n½ ne sur 118, dr 2600 ft.

EDWARDS COUNTY—Plateau O & G Co.'s Hatch 1, J. W. Hayes sur, sec 66, HE & W. T. RR. sur, abnd 5175 ft.

FAYETTE COUNTY—MeNeil Pet. Co.'s V. Daubala 1, A. Thompson lg, dr 1500 ft.

GOLIAD COUNTY—R. B. Swiger's Carrie Wood 1, blk 23, Swiger subd, Wood Ranch, George Villa sur, dr 4731 ft.

GONZALES COUNTY—Victoria Drlg. Co.'s (M. S. Holliday et al) T. G. Edwards 1, W. W. Pace 1/3 league, blk "A" Holiday subd, dr 1275 ft.

GUADALUPE COUNTY—J. L. Collins' F. H. Wornecke 1, 330-ac tr, Arch Gibson sur, dr plugs 2068 ft. Diamond Halff Oil Co.'s E. Bibbs et al 1, 66.6-ac tr, Joel W. Robinson sur, dk. Long & Roos' Ed Felix 1, 75-ac tr, V. Duran sur, sd 634 ft. Nick Marosis et al's Wm. Maierhofer 1, 100-ac tr, L. A. Peters sur, set 6 in casing 2007 ft, top Eagleford 1998 ft t/chalk 1897 ft, top buda 2512 ft, td 2020 ft, to comp as gasser in 780 ft sand. Dave T. Mulhalland's T. W. John 1, J. 12, Davis sur, lcn. Walter Myrrick et al's (was W. J. Dobbs et al) Gus Jahns 1, 100-ac lse, Jose K. Davis sur, washing down to 2000 ft, slight oil show. Perot Oil Co.'s John Priestly 1, 53-ac tr, G. W. Williams sur No. 26, setting casing 2000 ft. Riddle Oil Co.'s Nid Herff 1, 50-ac lse, Eligio Gortari sur, dr 1075 ft; E. Nolte et al 2, 60-ac lse, John Sowell sur, dk. J. B. Stoddard et al's Eliza Harris 1, Green DeWitt sur 11 in old Sal Mar field, set casing broken streaks of hard chalk 2036-63 ft, so & g 2136 ft in chalk, td 2141 ft, fsh for bailer. W. J. Walton et al's P. K. De Lany 1, 417-ac farm, Jesus Cantu sur, ru. W. J. Walton et al's Martin Hoffman 1, Green DeWitt sur No. 1, 2665 ft, testing.

HIDALGO COUNTY—Dale L. Smith Oil Company's Fairbanks and Young 1, blk 44, porc 46, coring 2260 ft. Sterling O. & R. Corp.'s J. C. Engelman 1, lot 5, M. T. L. & I. Company subd, dr 6100 ft. Union Sulphur Co. et al's American et al 7, tract No. 2309, blk 59, Canisallo dst, td 7608 ft, sand 7484-91, testing.

JIM WELLS COUNTY—Arkansas F. O. Co.'s G. H. Bierstadt 1, blk 32, Joseph Reynolds sur, set 10 in cas 473 ft. Gist & Graddy's B. W. Owens 1-A, Frank sur 152, dr 1500 ft. R. B. Swiger et al's Adams 1, R. Adams sur 122, dr 4550 ft. Tsesmelis and Reese's Earhart 1, 373.3-ac tr. John Suggs sur. diggig pits.

JACKSON COUNTY—Shell's T. N. Mauritz 1-B, O. S. York sur, pits dug. Texas Co.'s Mauritz Bros. 1, D. S. York sur No. 8, ru.

KARNES COUNTY — Victoria Drlg. Co.'s John Yanta 1, S. G. Hardaway sur, dr 1575 ft.

KENDALL COUNTY—Claude Smith's J. M. Gerfers 1, 119-ac tr, Mark Hodgson sur, lcn.

KERR COUNTY—S. W. Forrester's J. W. Bailey 1, A. L. Starky sur No. 408, bailing 770 ft.

LEE COUNTY—James E. Pederson's C. A. Turner 1, D. Hudson sur, swabbing 6560 ft.

LIVE OAK COUNTY — R. H. Feltner's Sauger Ranch 1, G. C. & S. F. sur 385, loc. Henderson Coquat's Regan 1, Santiago McGloin sur, cor 2778 ft. Mazo Oil Co.'s Chestnut 1, 50-ac lse, Ayers sur, dr 200 ft. Reynolds, Richardson, Adams & Lyles (Reliance Oil and Roy. Co.) Geo. West 1, lot 515, blk "D" Geo. West subd, dr 2400 ft. R. A. David et al's Border Nat'l. Bank 1, Brown 100-ac tr, Stephen Hayes sur, prep sp.

McMULLEN COUNTY—Atlantic's W. A. Lowe 1, sur 466, lcn. Big Rock Corp.'s Martin 1, 954-ac tr, loc. Humble's Couger 1, se A. B. M. sur 46, lcn. E. M. Jones' Ezzell 1, 160-ac tr, sec 3, Ezzell Ranch sub. T. Adams sur cem 7 in 1275 ft, t/Mirando 1283 ft, will complete in Government Wells, 1275 ft. Loma Oil Co.'s L. Jacob 2-B, 1102-ac tr, G. H. & H. R., td 1070 ft, prep set casing. George Snider's B. C. Claunch 1, 100-ac tr, M. Hely sur, dr 1000 ft.

NUECES COUNTY—I. J. Allen and Seaboard Pet. Co.'s J. D. Chapman et al No. 2, sec 38, Laureles Farm tr, Ramon de Ynomosa gr, td 6711 ft, testing. Mills Bennett's J. O. Lamb 1, 80-ac lse out of 527.4-ac tr, Vicente Lopez de Hirrira, dr 5570 ft. Camp Prod. Co.'s Wardner 1, Stratton area, dr 2575 ft. George E. Robinson's Olie Landon 1, 16.67-ac tr, sec 1, Laureles Farm Tr, loc. Sloan-Harvey and Green River Oil Co.'s Eno. Cassena 1, sec 27, Agua Dulce farm lots, Benton Pasture subd, Antonio Longoria gr, dk. Southern Minerals Corp.'s Richard King 1, sec 32, King Farm lots, set 10† in 1024 ft; Sevier 2-B, relief well 890-ac.

REAL COUNTY—Sun's Dietert and Oppenheimer 1, Section 7 GWT and P RR survey, dr 4955 ft.

REFUGIO COUNTY—Paul Meaders' Temple 1, Sec 1 G. W. Maine sur, ab 218, sd 6760 ft. Wynn Dr. Co.'s Roach 1, John Partick, Thomas & Jas. Douney sur, center blk 13, Morgan subd, dr 5500 ft.

SAN PATRICIO COUNTY — Buckingham Oil Co.'s Jean Davis 1, 34. 8-ac tr, sec 27, Stapper subd, loc. W. B. Craig et al's Drainage Ditch 1, 100-ac lse, M. Ramon sur, testing 5013 ft. Eleanor Oil Co.'s Davis 1, 208.8-ac tr, G. Grover sur, dr. Phillips' Schmidt 1, sec 81, Pauls sub. Colman-Fulton Pasture lands, dr 2200 ft. Eleanor Oil Co.'s J. F. Green est 1, T. T. Williamson sur, sp & sd.

STARR COUNTY—G. E. Dodds B. D. Wood est 1, porc 84 Camargo Sures, dr 1700 ft. John H. Clopton et al's Tyerina 4, blk 12, share 14-c, porc, 80, dr 525 ft. John H. Clopton et al Green 1, block 5, sh 85, porc. 81, J. of Carmargo, td 2020 ft, tested 300 pounds pressure with dry gas, 3 minutes dst 1610-28 ft. McLeod et al's Cayetans Ramos 1, sur 150, dr 250 ft. Moss & Heard's S. B. Ricaby 3, proc 83, J. of Camargo 23, dr 960 ft.

WEBB COUNTY — James M. Anderson's Pablo Juaraz 1, block 13, survey 1111, woc 20 ft. Mills Bennett's J. K. Kirkpatrick 1, sec 14, blk 1, G. C. S. D. and R. G. N. G. sur, dr 2100 ft. Kepley Prod. Co.'s Billings 1, sur 6, lcn. O. W. Killam's Fee 1, blk 1, sur 1690, drilling 3900 ft.Joe Palmer's Laredo Nat'l Bank 1, sur 463, dr 505 ft. Porter-Blanchard et al's Felix Perez et al 1, sec 1010, dr 1065 ft. Wilcox O&G Co.'s Dunbar 1, w/cor at r/a 800 ft to loc, dr 3430 ft.

ZAPATA COUNTY — Ahler Bros.' Daniel Yzaguirre 1, sh 17, porc 15, abnd 420 ft. Mills Bennett Prod. Co.'s F. B. Martinez 1, blk 84, sh 1, El Grullo gr, lcn. W. C. Bob's J. M. Martinez 1, blk 22, W. R. Duck subd, Randado gr, woc 672 ft. H. G. Lewis' S. Benavides 1, blk 39, Villa gr, lcn. Magnolia's Ramona Cuellar 4, sur 245, dk. William H. Winn's Carlos Vela et al 1, blk 6, Jamison subd, porc 20, dr 1200 ft. Zapata Corp.'s Justina Garcia et al 1, sh 3, comitas gr, dr 700 ft.

ZAVALLA COUNTY—J. F. Wicox's J. T. Gillamn 1, sec 11, blk B. W. T. and R. Y. sur, dr 1875 ft.

TEXAS GULF COAST

BRAZORIA COUNTY — Pure's Slade 1, Peach Point prospect, S. F. Austin sur, dr shale 3698 ft.

BRAZOS COUNTY — Crosby Drlg. Co.'s Lewis Orlando 1, T. H. Mays sur, sd 3310 ft.

CHAMBERS COUNTY—Kirby Pet. Co.'s Harden 1, w of Cotton Lake, M. L. Short sur, dr shale 3480 ft. Sun's White Estate B-1, Wm. Mays sur, coring 8588 ft.

HARRIS COUNTY—B. A. Farrell & J. B. Cox et al's Bender Estate 1, w of Humble field, M. W. Travis sur, woc 1000 ft. Stanolind's Oates 1, Clinton area, C. Martinez sur, dr shale 7415 ft; same operator's Warren Minerals 1, Hockley dome, H&TB sur No. 1, dr shale 6419 ft. Texas Gulf Prod. Co.'s Gillispie & Garnsey 1, Aldine area, S. Contreras sur, dr shale 5765 ft.

JEFFERSON COUNTY—Humble's Jefferson Land Co. 1, Cheek area, C. Hillibrandt sur, woc 8100 ft.

LIBERTY COUNTY—Diadem Oil Corp.'s Pickett 1, Devers area, H&TB sur No. 10, cutting and pulling 6846 ft.

MATAGORDA COUNTY — Continental's Robbins 2, Citrus Grove area, C. Franz sur, woc 8908 ft. Hammond Exploration Co.'s Croker 1, South Bay City field, E. Hall sur, comp 650 bbls daily 8194 ft. Glenn H. McCarthy's Foley 1, Palacios porspect, L. Goodwin sur, coring 8235 ft. Strake Pet. Corp.'s Sargent 1, Poole Ranch prospect, L. E. Parker sur, abn 9503 ft. Sun's Craig 2, Hawkinsville, J. Williams sur, swabbing 3775 ft. United North & South Dev. Co.'s Stoddard 1, sw of Buckeye field, J. B. Cotton sur, dr shale 8087 ft.

POLK COUNTY—Mayo et al's Mayes 1, w of Segno, J. G. Loving sur, dr shale 350 ft.

WALLER COUNTY — Sumas Prod. Co.'s Menke 1, se of Hempstead, C. Donohue sur, dr shale 4438 ft. H. E. Williams' G. C. Giddings 1, near Hempstead, J. Mouser sur, dr shale 930 ft.

WHARTON COUNTY—Sam G. Harrison's Byerly 1, El Campo prospect, E. T. RR. sur No. 27, dr shale 6318 ft. Plummer et al's L. Logue 1, Spanish Camp prospect, S. F. Austin sur, No. 3, washing to bottom at 7910 ft. The Texas Co.'s Kluck 1, Blue Basin prospect, J. Hyland sur, dr shale 5480 ft; same operator's Weatherer 1, e of Louise, Ogden sur, dr shale 3345 ft.

WYOMING

CARBON COUNTY — General Petroleum Corporation's Union Pacific 1, sw sw sw 6-19n-83w, plugged and abd in Niobrara shale at 2900-3050 ft when well failed to develop commercial production. Well was plugged back to Niobrara after finding water in Sundance at 5530 ft td.

GOSHEN COUNTY—Ohio Oil Co.'s Red Cloud Cattle Co. 1, ne nw 28-29n-62w, dr 2735 ft in red beds.

LARAMIE COUNTY—Amerada Petroleum Corporation's Morton 1, csw sw 13-13n-68w, dr 9173 ft in Sundance sands.

PARK COUNTY—General Petroleum Corporation's Government 1, nw nw nw 33-37n-100w, reaming at 5000 ft to set 9⅝ in csg after recovering 68 ft of drill stem collar and bit frozen in hole at 4884 ft. Production string will be set on top of Embar lime at 5660 ft where well topped saturation. May deepen to Tensleep.

Pipe Line Bridge

Pipe line bridges are described in a new bulletin (No. 303), recently issued by Pittsburgh Des Moines Steel Company of Pittsburgh, Pa. Profusely illustrated, this booklet gives several instances of pipe line bridges in service.

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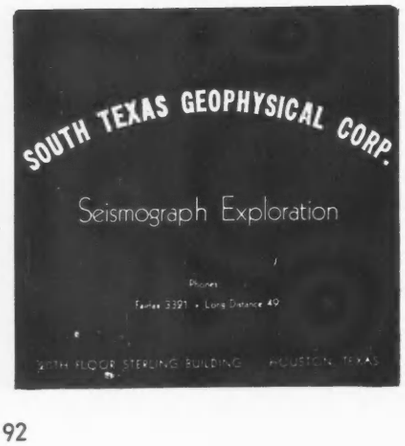
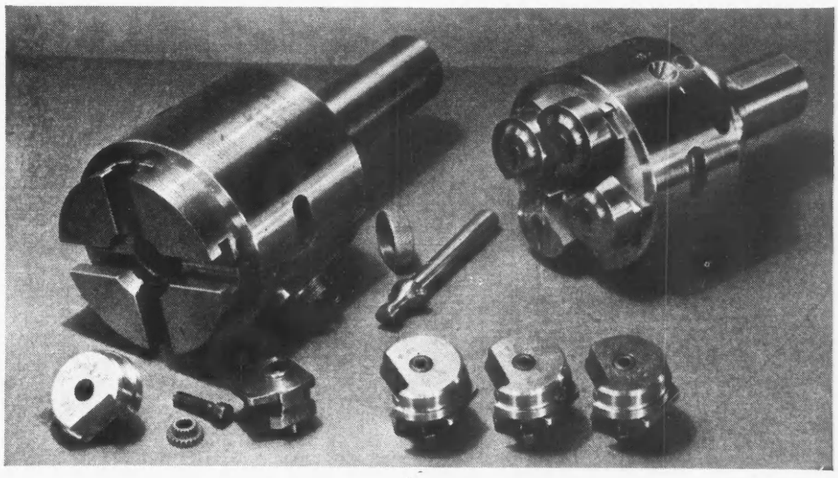


NEW PRODUCTS FOR THE FIELD
Machinery • Tools • Catalogs • Books

MILLING TOOLS
The National Acme Company

The National Acme Company, Cleveland, Ohio, has announced a new hollow-end milling tool. This tool is designed to use circular chasers with the same micrometric adjustment and positive locking feature as is used in holding circular chasers. By using more than one step on the cutters, it is possible to turn several diameters with one pass.



National Acme Milling Tool

After the tool has completed the cut, the cutters are automatically released and backed off, without marring the work. Adjustment for diameter is provided in the tool. The cutters are sharpened much the same as ordinary cutters, but are set after sharpening by means of a micrometer gauge to insure even distribution of the cut. This method of hollow milling enables the operator to resume work with a minimum of down-time.

Cutters may also be used for facing or turning a radius on a shoulder, if desired. The tool holder may also be used as a standard self-opening automatic die head, by simply changing from hollow milling cutters to circular chasers. In this way, either milling cutters, circular chasers, or a combination of both may be used in these tool heads. Diameters from .056 inch to 13⅜ inches may be end-turned in this manner with standard cutters.

RECORDING POTENTIOMETER
The Bristol Company

The Bristol Company, Waterbury, Connecticut, has developed a new recording potentiometer of the round-chart type, known as the Pyromaster. This recording potentiometer is available as a pyrometer, tachometer, resistance thermometer, millivoltmeter, and milliammeter, and operates on an entirely different principle, which makes possible a number of very important exclusive features, the manufacturer claims.

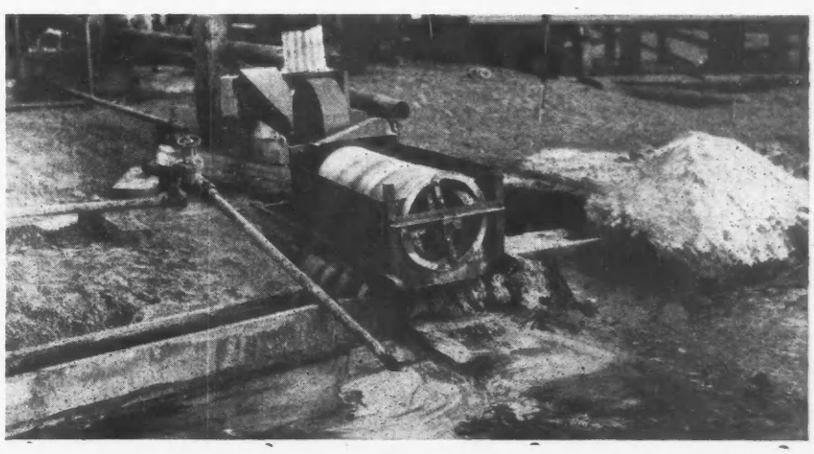
The potentiometer requires no lubrication; is not affected by normal plant vibration; there is no mechanical motion of any kind except when a change in the measured quantity takes place; and it can be used under exceedingly rough plant conditions where the air is laden with dust, moisture, and corrosive fumes. The operating mechanism is made up of five small, compact, units which are replaceable. There are no mechanical connections of any kind between the galvanometer unit and the other units.

MUD SCREEN
W-K-M Company

W-K-M Company, Houston, Texas, has recently placed on the market an entirely new method of screening drilling fluid. The unit is pictured here, in operation on a West Texas drilling well.

Mud returns from the well furnish the power to operate the screen, which is built on a rotary principle. Circulation from the well enters a mud inlet set at sufficient angle to provide ample velocity to drive a pelton wheel. A simple gear arrangement at the pelton wheel rotates the mud cylinder which embodies a series of spiral vanes for equal distribution of circulation over the screening area of the cylinder. The combination vibrating and rotating motion of the cylindrical screen separates the shale and cuttings from the finer mud fluid.

The manufacturers explain that the absence of excessive vibration eliminates undue destruction to screen or other working parts, and prolongs the life of the unit.



W-K-M Mud Screen

CONTROL INSTRUMENT
Consolidated Ashcroft Hancock Company

Consolidated Ashcroft Hancock Company, Bridgeport, Conn., has announced a new non-indicating controller known as the Wide Range Controller, Type 2426. While housed in but a 4½-inch Phenol case, this apparently junior controller is in fact a most advanced instrument for controlling temperature and pressure as it has been built compactly and up to every well known American Instrument standard.

Wide Range Controller

The Wide Range operates on air

pressure of 15 pounds and has a throttling range of from 1 percent to 15 percent. The temperature type has a graduated range of from —30 to 500° F. The pressure type has a graduated range of from 15 to 500 pounds. Where required the controllers are supplied with balanced capillary tubing overcoming room temperature disturbance. Furnished with vapor tension bulbs with selection of fittings, connections and separable sockets to fit your individual job.

While a junior controller to all outward appearances, it has all of the standard American Controller units called for in a non-indicating controller and may be used on any control job where a recording or indicating controller is not specifically required.

An illustrated and descriptive catalog of the new Wide Range with bulb type tabulation has just been released.

BATTERIES

The B. F. Goodrich Company

The mileage guarantee for Goodrich Kathanode batteries used in commercial service has been greatly increased, it is announced by The B. F. Goodrich Company, Akron, Ohio.

On all heavy-duty Goodrich Kathanode batteries for trucks and buses, the guarantee has been raised from 18 months or 36,000 miles to 18 months or 72,000 miles.

Guarantee on commercial type Goodrich Kathanode batteries for light trucks has been raised from 18 months or 36,000 miles, to 18 months or 54,000 miles.

Passenger car type Goodrich Kathanode Electro-Pak batteries used in commercial service have had the guarantee increased from 18 months or 36,000 miles, to 18 months or 54,000 miles.

These changes do not affect, in any way, the guarantee "guaranteed as long as you own your car," which applies to Goodrich Kathanode Electro-Pak batteries in passenger car installations.

WIRE LINE DEVICE

E. M. Smith Company

E. M. Smith Company, Los Angeles, has announced the "Grizzly No-Whip Line Saver," a device designed to take the whip out of a drilling line. The manufacturer claims the device will force the line to track perfectly, and prevent whipping or piling up during spooling operations.

The device consists principally of a steel frame and four rubber rollers. The rollers are made of oil-resisting rubber compound, and are finished complete with bearings. Ball bearings are used. The rollers may be replaced with little trouble or expense. The top and bottom rollers take out the whip, while the side rollers help to spool the line.

The device is not a rigid line guide. It can be suspended at any point in the derrick, hangs freely at any height over drum, and functions at any angle.

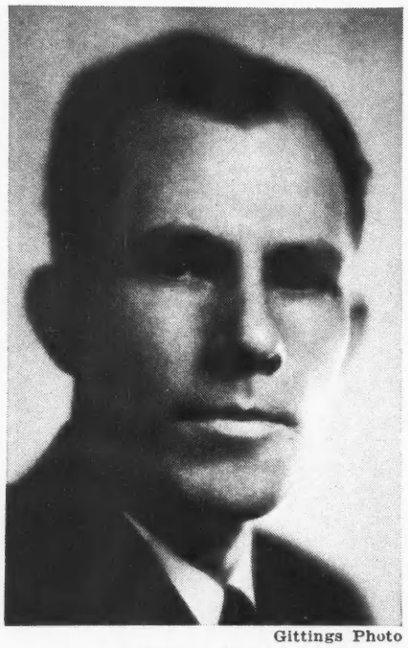
TENNESSEE

The State of Tennessee, Division of Geology, has issued an interesting summary of the mineral resources of the state. The 102-page bulletin was written by Kendall E. Born, and is now ready for free distribution.

This Week with the Industry's EQUIPMENT SUPPLIERS

Jack Benson Joins American Steel Derrick

Effective March 1, American Steel Derrick Company, Tulsa, will have representation in the Gulf Coast and Southwest Texas districts. Jack Benson, for the past 10 years with Republic Supply Company in Oklahoma, Kansas and Texas, will become representative of the company on that date.



Gittings Photo

JACK BENSON

Benson will make headquarters at the company's new warehouse at 5820 Navigation Blvd., Houston. His territory will include all the Gulf Coast of Texas and Louisiana and the Southwest district of Texas in addition to a part of North Texas. Benson has been Houston city salesman the past 4½ years for Republic Supply Company.

Bob Horton Visits Link-Belt Plants

Bob Horton, sales representative in the Gulf Coast territory for the oil field division of Link-Belt Company, has returned to Houston from a trip to Link-Belt plants at Indianapolis and Philadelphia. As a side trip he visited New York City while in the East.

Walworth Enlarges Houston Personnel

Charles G. Finkle, formerly acting manager of Gulf Coast sales for Walworth Company, located at the Houston office, 1117 Second National Bank Building, was appointed manager of Gulf Coast sales, effective February 15, according to announcement by Fred W. Duemler, vice president.

H. C. Nannen has been appointed manager of oil refinery sales in the Mid-Continent and Gulf Coast districts. Nannen has been with Walworth Company for many years specializing in oil industry sales. He will transfer his headquarters from the Chicago office to Houston early in March.

Gates Rubber Company Opens Tulsa Warehouse

T. D. Williamson of Tulsa has been named district representative for Gates Rubber Company of Denver. The company is opening new offices and a warehouse at Tulsa. Williamson will be assisted by his son, T. D., Jr., doing engineering sales work at the new headquarters.

Dave Collins Joins Lamtex Equipment Corporation

H. D. (Dave) Collins, production engineer for Gulf Oil Corporation, Tulsa, resigned March 1 to become vice president of Lamtex Equipment Corporation at Fort Worth, Texas. His first activity will be to assist other officials of the firm in getting settled in their new quarters, the company recently moving there from Shreveport, Louisiana.

Collins is a native of West Virginia, and graduated from Marietta College with a B.S. degree in chemical engineering in 1923. During his college days he helped his father, W. J. Collins, in tank manufacturing, tank contracting, drilling and other lines of oil field work. He worked with National Refining Company, Putnam Construction Company and Parkersburg Rig & Reel Company before going with Gulf in 1925.

Oil and Gas Press Bureau

H. D. COLLINS

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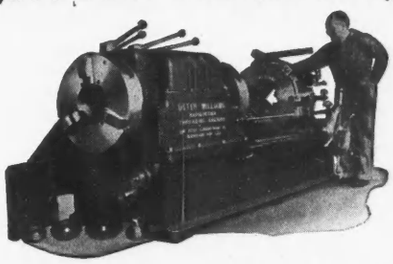

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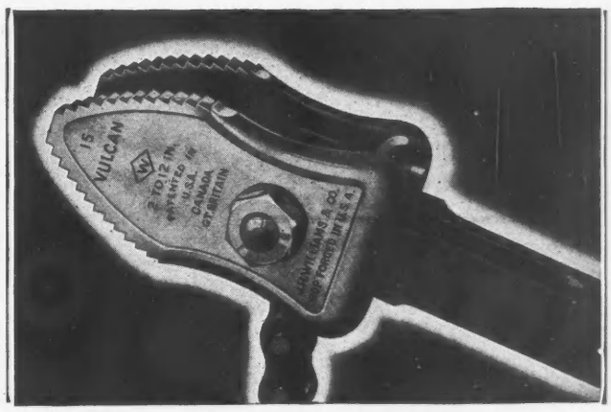

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"I hear Freddie has an inferiority complex."

"Well, the mean thing. He hasn't asked me out in it yet."

Happy

"Doesn't it strike you that's a queer harp that new woman angel is lugging around?" asked St. Peter, with a perplexed frown.

"That isn't a harp, it's a radio set," answered Gabriel. "She's enjoying her husband's howls from Station HLL."

The Reward

A Scotsman, leaving his friend's house where he had been paying a visit, held out a nickel and a dime, saying, "Now, Sandy, which one will ye hae?"

Young Sandy, being a cute, wee beggar, said: "Ach, Mr. M'Tavish, I was always taught no' to be greedy, so I'll hae the wee one."

M'Tavish, not to be outdone, replied, "Weel, Sandy, for being a good boy, and not being greedy, I'll gie the big one to ye."

Coffee Grounds

Miss Sophia Jones tripped into the lawyer's office. "Cain't ah sue dat no good Rastus Smiff fo' sompein', mister? He promised to marry me, dat he did, an' yestiddy he done 'loped with another gal."

"Promised to marry you, eh?" mused the lawyer. "Well, have you anything in black and white to show for it?"

"No suh," replied Sophia. "Jes' black is all."

Questionable Veracity

Do you consider the defendant a reliable man? Has he a good reputation for truth and veracity?

Well, to be honest with you, Your Honor, that man has to get somebody else to call his children at feeding time. They won't believe him.

The Poser

"I suppose," said the lady to the street car conductor, "if I pay the fare of my dog he will be treated the same as other passengers and be allowed to occupy a seat."

"Of course, Madame," the conductor replied politely, "He will be treated the same as other passengers and can occupy a seat, provided he does not put his feet on it!"

Get the Slide Rule

Did you ever run up against a mathematical problem that stumped you?

Yes, indeed. I could never figure out how, according to the advertisements, 85% of the dentists recommended one brand of tooth paste, 92% recommended another brand, and 95% recommended still another brand.

Jingle, Jingle

Along a country road came a $7000 limousine. As it caught up with a small car, the owner of the big car could not resist the temptation to slow down and jolly the other driver a bit.

"Heavens, man," he said, "what is it about your car that makes such a dreadful rattling sound?"

"That? Oh, that's the $6500 jingling in my pocket," replied the small car driver.

What's Wrong?

"I hear that pretty new school teacher is dizzy. Is that right?"

"Don't ask me. All I know is that she kept Johnnie ofter school for two hours the other day and then just before she sent him home she told him to forget everything."

Let's Swell Up and Bust

A man took his wife out to dinner at a hotel restaurant the other night. A short-skirted damsel breezed in and, there being nobody else in sight, proceeded to vamp him.

"My dear," grinned the fatuous chump to his wife, "that girl over there is smiling at me."

"That's nothing," replied the better half, "when I first saw you I laughed like h——l!"

Embarrassing Moment

Dear Sir—I am a stenographer for our local weather man. Last week he and I were in the observation tower together and were looking over the dials on the instrument boards. So, picture my dismay when, just as his wife walked in the door, I said, "It looks like we're going to have an off spring, Mr. Hicks!"

Collector

"That's a nice collection of books you've got! You ought to have some shelves."

"I know: But nobody seems to lend shelves."

Smart

A little girl of five was entertaining while her mother was getting ready. One of the ladies remarked to the other with a significant look: "Not very p-r-e-t-t-y," spelling the last word.

"No," said the child quickly, "but awful s-m-a-r-t."

Getting Harmony

"At a Minneapolis theater the other night I heard two harmonicists playing two different pieces at the same time. I saw you in the front row, so I thought you might remember what the two tunes were they were playing. Do you know?"

"Yes; one was playing, 'Get Along Little Doggie, Get Along,' and the other was playing, 'Trees'!"

At Home

"Good morning, my son," said the census taker. "You seem to be a bright little shaver. Have you any brothers and sisters?"

"Yeah, I got lotza brudders and sisters. There's seven of us boys and eight girls."

"My, my! The stork must visit you often."

"Visit us—hell! He lives with us!"

Found

Crabshaw—If I find I have to stay away more than one night I will send you a telegram.

Mrs. Crabshaw—Never mind, I've read it already; I found it in your coat pocket.

Moods

Teacher—Now, Anthony, try this sentence: "Take the cow out of the lot." What mood?

Anthony—The cow.

One Performance Only

A proud parent called up the newspaper and reported the birth of twins. The girl at the news desk didn't quite catch the message over the phone. "Will you repeat that?" she asked.

"Not if I can help it."

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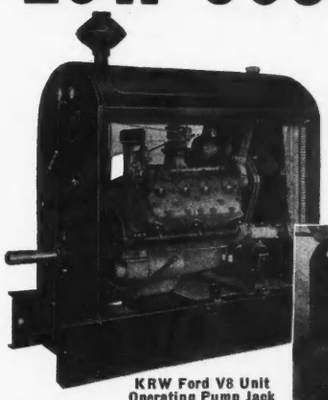
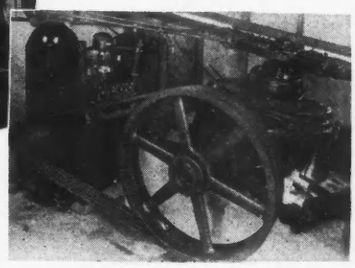


KRW Ford V8 Unit Operating Pump Jack



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K. R. WILSON, 20 Lock St., Buffalo, N.Y.

Exclusive Builders of Approved Ford Shop Equipment Since 1916

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from NEW YORK

a Suggestion to BUSINESS MEN

AFTER a busy day, many business men have reports to make—letters to write, etc. Those who live at Hotel McAlpin find ample writing desks, pens that WRITE, plenty of stationery . . . plus the comfort and quiet to concentrate.

Add to this the luxury of the NEW rooms, beautifully decorated and furnished, and you will understand why the McAlpin is the preferred New York Hotel of thousands of busy business men. JOHN J. WOELFLE, *Manager*

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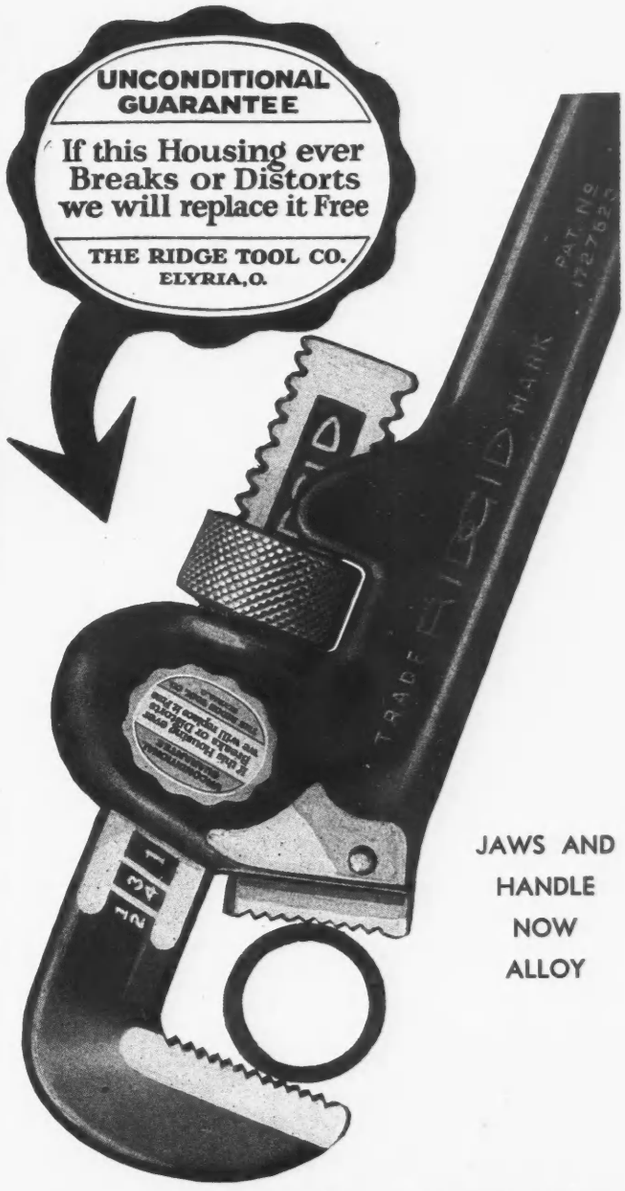

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A RIGID PIPE TOOL

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END-9

Photograph above shows TRINITY "INFERNO" *on location in Rodessa Field.* (Photo by LeDOUX)

Oil Men Welcome
TRINITY "INFERNO"

Sulphate Resisting Portland Cement

SLOW SETTING UNDER HIGH TEMPERATURE

● Oil men tell us that TRINITY "INFERNO" meets and exceeds every requirement of a "deep-well" cement . . . Sulphate Resisting and Slow Setting under High Temperatures, regardless of depth . . . Easy to Mix . . . Easy to get a Heavy Weight Slurry if desired . . . Desirable Fluidity, viscosity or pumpability . . . Rapid Hardening to give a high strength within one day. TRINITY "INFERNO" was not introduced until it had been perfected after exhaustive research and tests made at the request of leading oil companies in collaboration with their technical men . . . and that's why "INFERNO" is receiving such a hearty welcome from oil men.

YOUR LOCAL DEALER CAN SUPPLY YOU

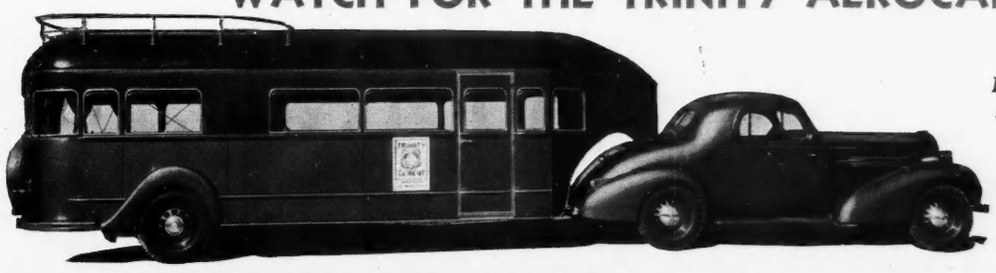
Try "INFERNO" on *your* next "deep-well" job . . . then you'll *always* insist on "INFERNO" for the advantages it gives.

TRINITY PORTLAND CEMENT COMPANY

Manufacturers of Trinity Standard Portland Cement, Trinity "High Early Strength" Portland Cement and Trinity Mix Masonry Cement.

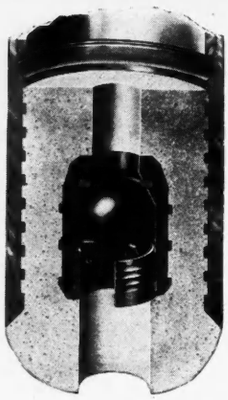
DALLAS ● FORT WORTH ● HOUSTON

WATCH FOR THE TRINITY AEROCAR!



In charge of one of Trinity's technical staff, our Aerocar is on tour of the oil fields. Watch for it!

You Get ALL 3 IN BAKER CEMENT EQUIPMENT



Note how the plug and valve are firmly anchored in the heavy seamless steel casing shoe.

The BAKER line of successful Cement Equipment for Guiding and Floating Casing gives you not only . . .

STRENGTH • VALVE EFFICIENCY • DRILLABILITY

But affords a combination of these important factors IN PERFECT BALANCE:

STRENGTH

The heavy seamless steel shoe, into which the plug of "Baker Formula" concrete and the Bakelite valve assembly are firmly anchored, provides a unit that is stronger than the collapsing strength of the casing upon which it is run. It will float the heaviest and longest strings of casing with an ample factor of safety.

VALVE EFFICIENCY

Here is valve efficiency at its best. The valve chamber is designed with a circulation area sufficiently large to allow free passage of cement slurry, yet is small enough to provide the necessary "wash-down" action.

Note from the illustration at right how the buoyant Bakelite ball (which floats freely in the cement slurry) double-seals against a rubber cushion, backed by Bakelite, at the slightest reversal of pressure. Positive, instant valve action is assured.

DRILLABILITY

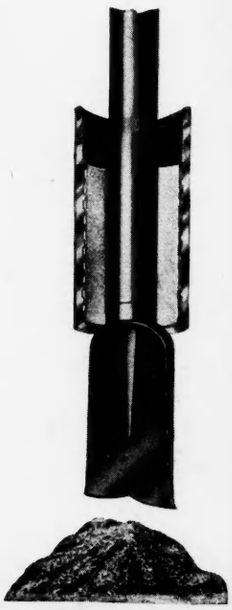
Complete drillability is the big feature of Baker Cement Equipment. Valve assembly and plug are constructed of Bakelite set on end in Baker-Formula concrete and both materials are easily drilled out, drilled up and circulatd out of the hole. As no metal of any description is ever used in the internal construction of Baker Guiding, Floating and Cementing Equipment, there are no dangerous fragments left in the hole to interfere with safe drilling or coring directly below shoe.

THE "BAKER BALANCE" MEANS *BETTER* RESULTS in landing Casing, Cementing, and Drilling Out.

SEE THE BAKER SECTION OF YOUR 1937 Composite Catalog for complete construction and operating details . . . or write for a Baker Catalog of your own.

Showing how buoyant Bakelite ball fits tightly on upper seat of valve assembly while casing is being floated in, or after cementing.

Detail showing design and construction of Baker Bakelite Valve Assembly. Note the large circulation passageways.



Here is complete drillability — concrete and a minimum amount of Bakelite is most easily drilled up and circulated out of the hole.

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BAKER CEMENT EQUIPMENT

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Petroleum Rectifying Co.	153
Petty Geophysical Engineering Co.	—
The Pierce Governor Co.	—
Pittsburgh Equitable Meter Co.	—
Pittsburgh Steel Co.	111
Hotel Pittsburgher	—
Portable Rig Co.	171
Producers Supply & Tool Co.	—
R	
Reading, Pratt & Cady Co.	105
Rector Well Equipment Co.	—
Reed Roller Bit Co.	22-23
Joseph Reid Gas Engine Co.	—
The Republic Rubber Co.	113
Republic Steel Corp.	28-29
Rieber Laboratories	185
The Ridge Tool Co.	211
W. O. Robbins	210
Rollway Bearing Co.	115
S	
Salt Dome Oil Co.	182
San Jacinto Inn	—
J. A. Schley	210
Schlumberger Well Surveying Corp.	59
Second National Bank	34
Security Engineering Co.	—
Seismic Explorations Inc.	—
Shaffer Tool Works	61
Shell	—
Sinclair Refining Co.	—
SKF Industries, Inc.	99
A. O. Smith Corp.	64-65
E. M. Smith Co.	182
Nowery J. Smith Supply Co.	—
South Chester Tube Co.	—
South Texas Geophysical Corp.	151
Southern Engine & Pump Co.	—
Southern Pacific Lines	—
Spang & Co.	207
Spang, Chalfant & Co.	—
Sperry-Sun Well Surveying Co.	88
Stanley Tools	208
Star Drilling Machine Co.	—
Geo. W. Strake	134
A. J. Stephens & Co.	—
Stevens Hotel	—
The Sullivan Co.	—
T	
The Texas Co.	—
Texas Electric Steel Castings Co.	71
Texas Gulf Producing Co.	204
Texas Iron Works	—
Texas Rubber Specialty Corp.	—
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Thermoid Rubber Co.	131
Thornhill-Craver Co.	—
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Tips Engine Works	—
Titusville Iron Works Co.	—
Edgar Tobin Aerial Surveys	—
Tretolite Co.	—
Trimont Manufacturing Co.	—
Trinity Portland Cement Co.	—
Tulsa Chamber of Commerce	—
Twin Disc Clutch Co.	101
Twin-Seat Valve Co.	—
U	
Union Carbide & Carbon Corp.	—
Union Wire Rope Co.	—
United States Rubber Products Inc.	—
United States Steel Corp.	—
Universal Atlas Cement Co.	25
V	
Volcano Burner Co.	—
W	
The Watson-Stillman Co.	—
Waukesha Motor Co.	—
Western Electric Service	—
Western Iron & Foundry Co.	210
Westinghouse Electric & Mfg Co.	—
The Wheland Co.	107
Wickwire-Spencer Steel Co.	81
J. H. Williams & Co.	213
Williamsport Wire Rope Co.	—
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Wilson-Snyder Manufacturing Co.	—
Wilson Manufacturing Co.	—
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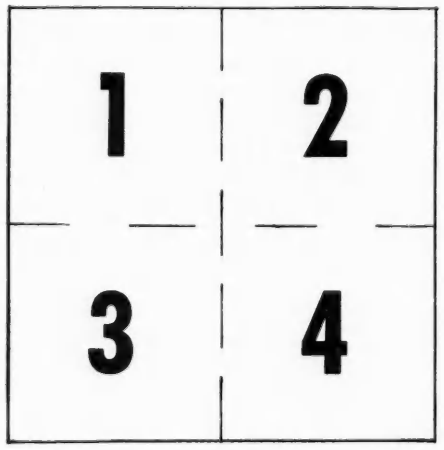
WKM Co.	—
Worthington Pump & Machinery Corp.	—
Y	
Yale & Towne Manufacturing Co.	—
Youngstown Sheet & Tube Co.	93

Maps on this order too large to
are filmed clockwise beginning i
right and top to bottom as many
diagrams illustrate the method:



ge to be entirely included in one exposure
ning in the upper left hand corner, left to
many frames as required. The following
thod:

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2

1	2	3
4	5	6
7	8	9

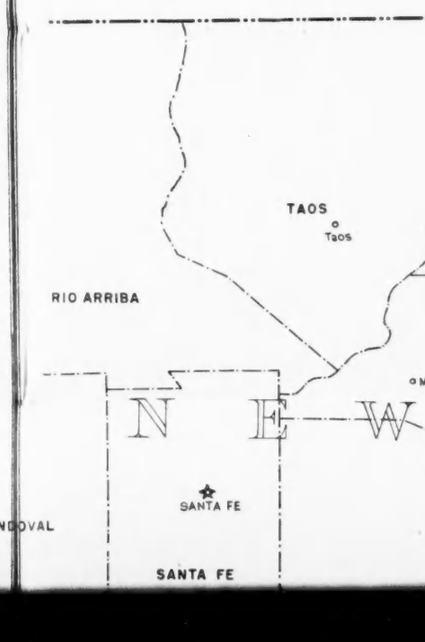
New Producing Structures Discovered in the Mid-Continent During 1936

ARKANSAS

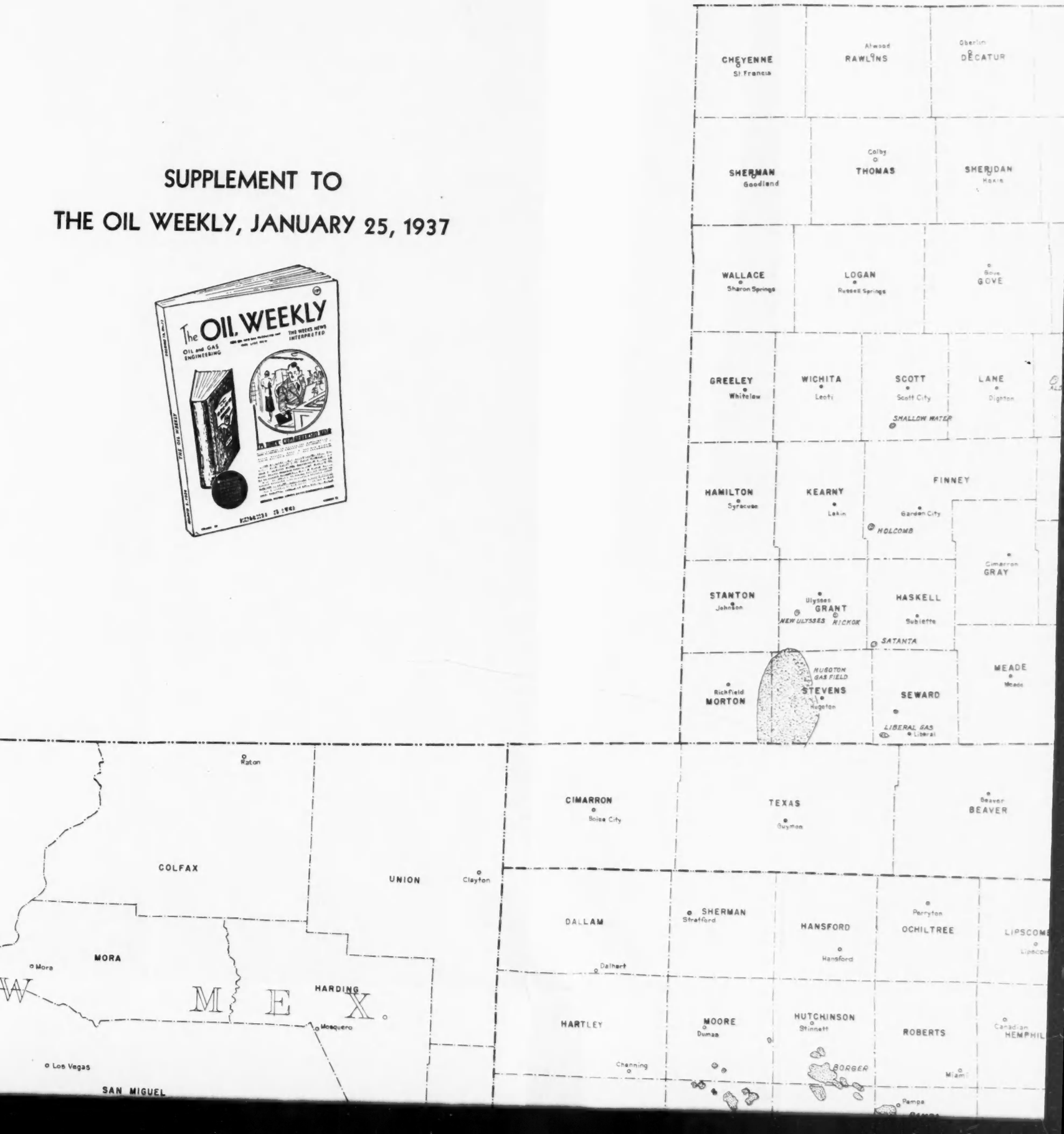
Field	*County*
Troy	Nevada

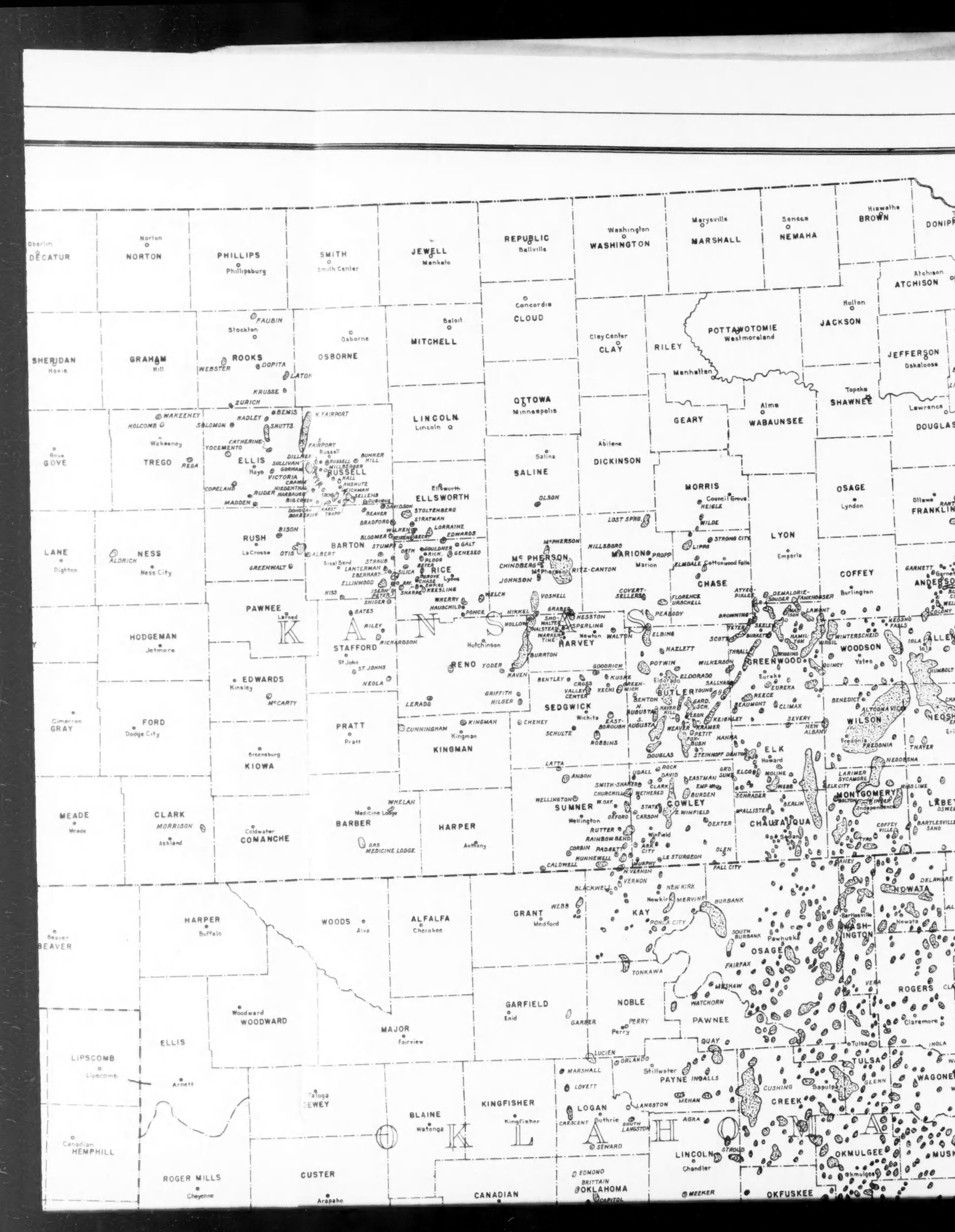
KANSAS

Field	*County*
Bloomer	Barton
Elliott	Barton
Hiss	Barton
Rick	Barton
Susank	Barton
Brandt	Butler
Watchorn	Clark
Walters	Ellis
Solomon	Ellis
Catherine	Ellis
Madden	Ellis
Antonio	Ellis
Haller	Ellis
Walters	Ellis
Wann	Ellis
Kraus	Ellis
Jones	Finney
Hamlin	Finney
Piney	Grant
Warkentine	Harvey
Nilson	Haskell
Larson	Haskell
North Canton	McPherson
Beeler	Ness
Pawnee Rock	Pawnee
Gilchrist	Pratt
Love	Reno
Edwards	Rice
Hauschild	Rice
Schartz	Rice
Lyons	Rice
Empire	Rice
Bowman	Rice
Doran	Rice
Ponce	Rice
Williamson	Russell
Trapp	Russell



SUPPLEMENT TO
THE OIL WEEKLY, JANUARY 25, 1937




DECATUR
NORTON
PHILLIPS
SMITH
JEWELL
REPUBLIC
WASHINGTON
MARSHALL
NEMAHA
BROWN
ATCHISON
SHERIDAN
GRAHAM
ROOKS
OSBORNE
MITCHELL
CLOUD
CLAY
RILEY
POTTAWATOMIE
JACKSON
JEFFERSON
GOVE
TREGO
ELLIS
RUSSELL
LINCOLN
OTTOWA
GEARY
WABAUNSEE
SHAWNEE
DOUGLAS
LANE
NESS
RUSH
BARTON
ELLSWORTH
SALINE
DICKINSON
MORRIS
OSAGE
FRANKLIN
PAWNEE
RICE
McPHERSON
MARION
LYON
COFFEY
ANDERSON
HODGEMAN
STAFFORD
RENO
HARVEY
CHASE
WOODSON
EDWARDS
SEDGWICK
BUTLER
GREENWOOD
ALLEN
GRAY
FORD
PRATT
KINGMAN
WILSON
NEOSHO
KIOWA
ELK
MEADE
CLARK
COMANCHE
BARBER
HARPER
SUMNER
COWLEY
CHAUTAUQUA
MONTGOMERY
LABETTE
BEAVER
WOODS
ALFALFA
GRANT
KAY
NOWATA
WASHINGTON
OSAGE
ROGERS
WOODWARD
MAJOR
GARFIELD
NOBLE
PAWNEE
TULSA
WAGONER
ELLIS
LIPSCOMB
BLAINE
KINGFISHER
LOGAN
PAYNE
CREEK
HEMPHILL
ROGER MILLS
CUSTER
CANADIAN
OKLAHOMA
LINCOLN
OKMULGEE
OKFUSKEE
KANSAS
OKLAHOMA

DONIPHAN
Troy
ATCHISON
Atchison
LEAVEN-WORTH
Leavenworth
WELBORN
FAIRFAX
KANSAS CITY
WYANDOTTE
BONNER SPRS
LINWOOD
DOUGLAS
Lawrence
CRANE-
MONTICELLO
DALLAS
JOHNSON
Olathe
CASS
Harrisonville
JOHNSON
Sedalia
PETTIS
COOPER
CALLAWAY
California
MONITEAU
JEFFERSON CITY
COLE
Linn
OSAGE
GASCO-
NADE
Union
FRANKLIN
ST. LOUIS
JEFFERSON
Hillsboro
MIAMI
Paola
Ottawa
FRANKLIN
RANTOUL
LAKE
HENRY
Clinton
MORGAN
Versailles
BENTON
Warsaw
MILLER
Tuscumbia
Vienna
MARIES
BATES
Butler
BARNETT
Garnett
ANDERSON
BUSH
CITY
WELDA
COLONY
BRAIES
GOODRICH
LINN
CENTER
VILLE
Mound City
Osceola
ST. CLAIR
HICKORY
Hermitage
Linn Creek
CAMDEN
PULASKI
Waynesville
Rolla
PHELPS
CRAWFORD
Steelville
WASHINGTON
Potosi
ST.
FRAN-
COIS
Farmington
GENEVIE
IOLA
MORAN
ALLEN
BOURBON
Ft. Scott
VERNON
Nevada
CEDAR
Stockton
DALLAS
Buffalo
LACLEDE
Lebanon
IRON
Ironton
Salem
DENT
Fredericktown
MADISON
CHANUTE
WALNUT
HEPLER
NEOSHO
Erie
CRAWFORD
Girard
BARTON
Lamar
POLK
Bolivar
REYNOLDS
Centerville
THAYER
ISLAND
Greenfield
DADE
GREENE
Springfield
WEBSTER
Marshfield
WRIGHT
Hartville
TEXAS
Houston
Eminence
SHANNON
WAYNE
Greenville
LABETTE
OSWEGO
Oswego
BARTLESVILLE
SAND
CHEROKEE
Columbus
JASPER
Carthage
LAWRENCE
Mt Vernon
Ozark
CHRISTIAN
DOUGLAS
Ava
Van Buren
CARTER
DELAWARE
CRAIG
ALLUWE
Vinita
OTTOWA
Miami
NEWTON
Neosho
BARRY
Cassville
Galena
STONE
Forsyth
TANEY
OZARK
Gainesville
HOWELL
West Plains
OREGON
Alton
RIPLEY
Doniphan
Poplar Bluff
BUTLER
Mc DONALD
Pineville
CLAREMORE
MAYES
Pryor
DELAWARE
Jay
Bentonville
BENTON
Berryville
CARROLL
BOONE
Harrison
MARION
Yellville
BAXTER
Mountain Home
FULTON
Salem
Hardy
RANDOLPH
Pocahontas
Corning
CLAY
GREENE
Paragould
Black Rock
Walnut Ridge
LAWRENCE
IZARD
Melbourne
SHARP
Evening Shade
INOLA
WAGONER
Wagoner
CHEROKEE
Tahlequah
Stilwell
ADAIR
WASHINGTON
Fayetteville
Huntsville
MADISON
Jasper
NEWTON
SEARCY
Marshall
Mountain View
STONE
INDEPENDENCE
Batesville
CRAIGHEAD
Jonesboro
Lake
MUSKOGEE
SEQUOYAH
Sallisaw
CRAWFORD
Van Buren
FRANKLIN
Ozark
JOHNSON
Clarksville
POPE
VAN BUREN
Clinton
CLEBURNE
Heber Springs
JACKSON
Newport
POINSETT
Harrisburg
CROSS

DONIPHAN
ATCHISON
JEFFERSON
LEAVENWORTH
WELBORN
FAIRFAX
BETHEL
BONNER SPRINGS
KANSAS CITY
WYANDOTTE
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Vinita
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Cassville
Galena
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TANEY
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Gainesville
HOWELL
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OREGON
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Doniphan
Mc DONALD
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Jay
ROGERS
Claremore
MAYES
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SEQUOYAH
Sallisaw
CRAWFORD
Van Buren
FRANKLIN
Ozark
JOHNSON
Clarksville
POPE
Russellville
VAN BUREN
Clinton
CLEBURNE
Heber Springs
WHITE
Searcey
WOODRUFF
Fort Smith
Charleston
Paris
LOGAN
CONWAY
Morrilton

ST. LOUIS

JEFFERSON
Hillsboro

St. Genevieve
GENEVIEVE

ST. FRAN-COIS
Farmington

PERRY
Perryville

Ironton

Fredericktown
MADISON

CAPE GIRARDEAU
Jackson

Marble Hill
BOLLINGER

WAYNE
Greenville

Benton
SCOTT

Charleston
MISSISSIPPI

Bloomfield
STODDARD

Poplar Bluff
BUTLER

NEW MADRID
New Madrid

Corning CLAY

Kennett
GREENE
Paragould
DUNKLIN

PEMISCOT
Caruthers-ville

Blytheville
CRAIGHEAD
Jonesboro
Lake City
MISSISSIPPI

POINSETT
Harrisburg

CROSS
Wynne

CRITTENDEN
Marion
MEMPHIS

Corinth

Larson	Haskell
North Canton	McPherson
Beeler	Ness
Pawnee Rock	Pawnee
Gilchrist	Pratt
Love	Reno
Edwards	Rice
Hauschild	Rice
Schartz	Rice
Lyons	Rice
Empire	Rice
Bowman	Rice
Doran	Rice
Ponce	Rice
Williamson	Russell
Trapp	Russell
Anschutz	Russell
Letch	Russell
Harbaugh	Russell
Benson	Russell
Steinert	Russell
Haferman	Rush
Kiskadden	Rooks
Faubin	Rooks
Snider	Stafford
Holcomb	Trego
Wagg	Trego

NORTH LOUISIANA

Field	*Parish*
Sibley	Webster
Simsboro	Lincoln
Lide-Greer	Bienville

SOUTH LOUISIANA

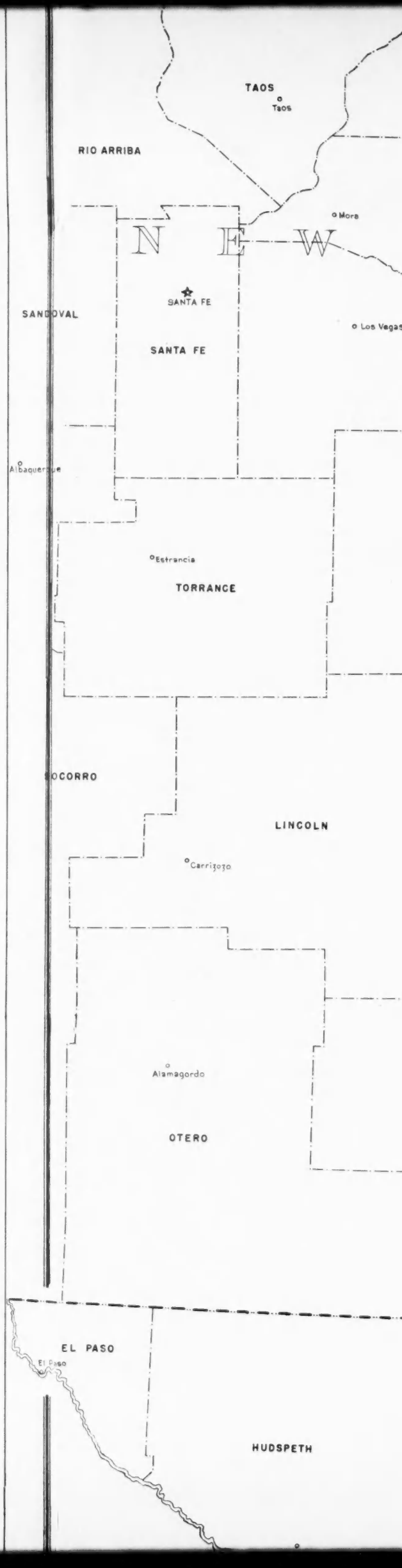
Field	*Parish*
Bayou Mallet	Acadia
Charenton	St. Mary
S. Jennings	Jefferson Davis
Cankton	St. Landry
Valentine	Lafourche

OKLAHOMA

Field	*County*
Erick	Beckham
Tussey	Carter
Sporn	Lincoln
Zimmerman	Lincoln
Stockton	Love
Yarhola	Seminole

SOUTHWEST TEXAS

Field	*County*
McCampbell	Aransas
Hicks	Bee
Voss	Bee
Alta Mesa	Brooks
Alta Verde	Brooks
Heyser	Calhoun
Colmena	Duval
Loma Vista	Duval
Palagana	Duval
El Mesquite	Duval
Sullivant	Guadalupe
Nolte	Guadalupe



COLFAX

UNION

Clayton

Boise City

BEAVER

DALLAM

SHERMAN

Stratford

HANSFORD

Hansford

OCHILTREE

Perryton

LIPSCOMB

Lipscomb

Dalhart

MORA

Mora

HARDING

M E X.

Mosquero

HARTLEY

Channing

MOORE

Dumas

HUTCHINSON

Stinnett

BORGER

ROBERTS

Miami

Canadian

HEMPHILL

Los Vegas

SAN MIGUEL

OLDHAM

Vega

POTTER

Amarillo

CARSON

Panhandle

Pampa

PAMPA

GRAY

WHEELER

Wheeler

SHAMROCK

Tucumcari

QUAY

DEAF SMITH

Hereford

RANDALL

Canyon

Claude

ARMSTRONG

DONLEY

Clarendon

COLLINSWORTH

Wellington

Santa Rosa

GUADALUPE

CURRY

Clovis

PARMER

Farwell

CASTRO

Dimmitt

SWISHER

Tulia

Memphis

BRISCOE

Silverton

HALL

CHILDRESS

Childress

Fort Sumner

DE BACA

Portales

ROOSEVELT

Muleshoe

BAILEY

Olton

LAMB

Plainview

HALE

FLOYD

Floydada

MOTLEY

Matador

COTTLE

Paducah

CHAVES

Roswell

COCHRAN

Morton

DUGGAN

HOCKLEY

Levelland

LUBBOCK

Lubbock

CROSBY

Crosbyton

DICKENS

Dickens

KING

Guthrie

YOAKUM

Plains

BENNETT

TERRY

Brownfield

LYNN

Tahoka

Post

RICHARDS POST

GARZA

KENT

Clairemont

STONEWALL

Aspermont

LEA

Lovington

MALJAMAR

ARTESIA

HOBBS

MONUMENT

LEA

EUNICE

EDDY

Carlsbad

OHIO

HENRY

COOPER

JAL

GAINES

SEMINOLE

Seminole

DAWSON

Lamesa

BORDEN

Gail

SCURRY

Snyder

ROTAN

ROYSTON

FISHER

Roby

MEANS

ANDREWS

DEEP ROCK

Andrews

PARKER

FUHRMAN

MARTIN

Stanton

HOWARD

Big Spring

IATAN

COAHOMA

WESTBROOK

Colorado

MITCHELL

Sweetwater

NOLAN

HOWARD-GLASSCOCK

CHALK

SETTLES

DAVIDSON-COLEO

SCHLABAUER

HOLT

NORTH CONDEN

Midland

SCARBOROUGH

GOLDSMITH

JOHNSON

FOSTER

ADDIS

Odessa

LECK

SAYRE

KEYSTONE

WINKLER

Kermit

ECTOR

HARPER

MIDLAND

GLASSCOCK

Garden City

STERLING

Sterling City

COKE

Robert Lee

LOVING

HENDERSON

HENDRICK

BROWN & ALTMAN

HALLEY

SEALY

JUDKINS

PENN

CONNELL

WHEAT

Mentone

O'BRIEN

WADDELL

CULBERSON

Barstow

WARD

SAND HILLS

TUBB

Pecos

GRAND FALLS

SOUTH WARD

PLEY

CRANE

CHURCH

McELROY

Crane

UPTON

REAGAN

IRION

Sherwood

San Angelo

TOM GREEN

REEVES

NETTLEVILLE

McCAMEY

BIG LAKE

HARPER
Buffalo
WOODS
Alva
ALFALFA
Cherokee
GRANT
Medford
WEBB
KAY
Ponca City
OSAGE
Pawhuska
TONKAWA
FAIRFAX
MESHAW
WATCHORN
PAWNEE
QUAY
LUCIEN
ORLANDO
MARSHALL
Stillwater
PAYNE
INGALLS
LOVETT
MEHAN
LANGSTON
CUSHING
CREEK
CRESCENT
Guthrie
SOUTH LANGSTON
AGRA
SEWARD
LINCOLN
Chandler
STROUD
OKFUSKEE
BEAVER
Beaver
Perryton
OCHILTREE
LIPSCOMB
Lipscomb
Hansford
Arnett
ELLIS
WOODWARD
Woodward
MAJOR
Fairview
GARFIELD
Enid
GARBER
PERRY
Perry
NOBLE
Taloga
DEWEY
BLAINE
Watonga
KINGFISHER
Kingfisher
CANADIAN
El Reno
EDMOND
BRITTAIN
OKLAHOMA
CAPITOL
OKLAHOMA CITY
MOORE
MEEKER
ROBERTS
Canadian
HEMPHILL
Miami
BORGER
ROGER MILLS
Cheyenne
CUSTER
Arapaho
Pampa
GRAY
WHEELER
Wheeler
SHAMROCK
SHAWNEE
CROMWELL
POTTAWATOMIE
Shawnee
EARLSBORO
SEMINOLE
BECKHAM
Sayre
SAYRE
WASHITA
Cordell
CLEVELAND
Denver
BOW-LEGS
Wewoka
WEWOKA
HUGHES
Holdenville
CADDO
Anadarko
Hobart
GOTEBO
GRADY
Chickasha
Mc CLAIN
CEMENT
CHICKASHA
KONAWA
ALLEN
BEBEE
STEEDMAN
ADA
Ada
PONTOTOC
GREER
Mangum
KIOWA
KILGORE
GARVIN
Pauls Valley
FITTS
JESSE
COAL
DONLEY
Clarendon
COLLINSWORTH
Wellington
Memphis
HARMON
Hollis
JACKSON
Altus
ALTUS
LAWTON
COMANCHE
Lawton
DUNCAN
DOYLE
ROBBERSON
SHOLEM ALECHEM
STEPHENS
Duncan
Sulphur
MURRAY
TIPTON
TILLMAN
Frederick
COTTON
Walters
WALTERS
RED RIVER
N.W. EXTENSION
JEFFERSON
Waurika
OSCAR
COMANCHE
FOX-GRAHAM
WHEELER
CARTER
LOCO
HEWITT
HEALDTON
Ardmore
CRINERVILLE
BROCK
JOHNSON
Tishomingo
Madill
MADILL
MARSHALL
LOVE
Marietta
ENOS
BRYA
Durant
HARDEMAN
Guanah
WILBARGER
Vernon
S. VERNON
PLUNKAM
SIGLER
LANDRETH
BURKBURNETT
TEXHOMA
WICHITA
Wichita Falls
HENRIETTA
NOCONA
K.M.A.
FREEMAN
HAMPTON
Henrietta
CLAY
ST JO
BULCHER
DALTON
LLOYD
Floydada
MOTLEY
Matador
COTTLE
Paducah
FOARD
Crowell
DICKENS
Dickens
KING
Guthrie
KNOX
Benjamin
BAYLOR
Seymour
ARCHER
Archer City
PETERSON
SWASTIKA
PORTWOOD
GAMBRELL
LITCHFIELD
PETER
KEMP
GROVES
YOUNG
NEWCASTLE
JACK
Jacksboro
BRYSON
MONTAGUE
Montague
MUENSTER
Gainsville
COOKE
JACOBS
GRAYSON
Sherman
CROSBY
Crosbyton
RICHARDS POST
RZA
KENT
Clairemont
STONEWALL
Aspermont
HASKELL
Haskell
THROCKMORTON
Throckmorton
Graham
S. BEND
BUNGER
HERRON
WISE
Decatur
DENTON
Denton
Mc KINNEY
COLLIN
Rockwall
R'KWALL
TARRANT
Ft Worth
Dallas
DALLAS
KAUFM
Kaufm
SCURRY
Snyder
ROTAN
ROYSTON
FISHER
Roby
JONES
LUEDERS
Anson
SHACKELFORD
COOK
BLUFF CR.
Albany
HAWLEY
NOODLE CR.
SAYLES
IVAN
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Breckenridge
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SEDWICK
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PALO PINTO
Palo Pinto
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PARKER
Weatherford
WESTBROOK
Colorado
MITCHELL
COAHOMA
CHALK
GLASSCOCK
Sweetwater
NOLAN
Abilene
VIEW
TAYLOR
BAIRD
Baird
PUTNAM
CALLAHAN
ADMIRAL
BAUM
Eastland
EASTLAND
RANGER
X RAY
DESDEMONA
ERATH
Stephenville
HOOD
Granbury
JOHNSON
Cleburne
ELLIS
Waxahachie
Glen Rose
Corsicana
NAVARRO
HILL
Hillsboro
BOSQUE
Meridian
STERLING
Sterling City
COKE
Robert Lee
McMILLAN
RUNNELS
Ballinger
GOLDSBORO
Coleman
COLEMAN
CROSS-CUT
PIONEER
SMITH-ELLIS
BROWN
Brownwood
SIPE SPRINGS
COMANCHE
Comanche
HAMILTON
Hamilton
NIGGER CREEK
CEDAR CREEK
LIMESTONE
McLENNAN

OTTOWA
Miami
NEWTON
Neosho
BARRY
Cassville
STONE
Galena
Forsyth
TANEY
OZARK
Gainsville
HOWELL
West Plains
OREGON
Alton
CRAIG
DELAWARE
NOWATA
Bartlesville
WASHINGTON
Nowata
Pawhuska
OSAGE
Vinita
Mc DONALD
Pineville
DELAWARE
Jay
ROGERS
Claremore
CLAREMORE
MAYES
Pryor
Tulsa
TULSA
INOLA
WAGONER
Wagoner
CUSHING
Sapulpa
GLENN
CREEK
CHEROKEE
Tahlequah
ADAIR
Stilwell
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Bentonville
Berryville
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Harrison
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Mountain Home
FULTON
Hardy
IZARD
Melbourne
SHARP
Evening Shade
WASHINGTON
Fayetteville
Huntsville
MADISON
Jasper
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SEARCY
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Mountain View
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Heber Springs
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Stigler
HASKELL
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Paris
LOGAN
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Devalls Bluff
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Sheridan
JEFFERSON
Pine Bluff
ARKANSAS
Mc CURTAIN
PIKE
CLARK
Arkadelphia
DALLAS
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LINCOLN
Star City
BRYAN
Durant
CHOCTAW
Hugo
SEVIER
DeQueen
HOWARD
Nashville
Vaughn Crk.
Idabel
HEMPSTEAD
Prescott
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Monticello
FANNIN
Bonham
LAMAR
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RED RIVER
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SMACKOVER
BRADLEY
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MILLER COUNTY
STEPHENS
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El Dorado
EL DORADO
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Hamburg
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TALCO
SULPHUR BLUFF
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Mt. Vernon
TITUS
Mt. Pleasant
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MOREHOUSE
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Saline
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RED LAKE
LONG LAKE
CAMP HILL
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CONVERSE
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NACOGDOCHES
Nacogdoches
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San Augustine
GRANT
Colfax
CONCORDIA
Vidalia

ARKANSAS

OTTOWA
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Vidalia
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CAYUGA
BOGGY CREEK
LONG LAKE
RED LAKE
AMP HILL

RIPLEY
Doniphan
BUTLER
NEW MADRID
New Madrid
Corning
CLAY
ANDOLPH
Pocahontas
Kennett
PEMISCOT
Caruthersville
GREENE
Paragould
DUNKLIN
Walnut Ridge
WRENCE
CRAIGHEAD
Jonesboro
Lake City
Blytheville
MISSISSIPPI
SON
POINSETT
Harrisburg
CROSS
Wynne
CRITTENDEN
Marion
MEMPHIS
ODRUFF
ST. FRANCIS
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Marianna
DE SOTO
Hernando
MARSHALL
Holly Springs
BENTON
Ashland
TIPPAH
Ripley
ALCORN
Corinth
Iuka
TISHOMINGO
Booneville
PRENTISS
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Tunica
TUNICA
TATE
Senatobia
Helena
PHILLIPS
UNION
New Albany
PANOLA
Batesville
LAFAYETTE
Oxford
Pontotoc
PONTOTOC
LEE
Tupelo
ITAWAMBA
Fulton
COAHOMA
Clarksdale
Marks
QUITMAN
YALOBUSHA
Coffeeville
TALLAHATCHIE
Charleston
CALHOUN
Pittsboro
CHICKASAW
Houston
AMORY
MONROE
Aberdeen
Rosedale
BOLIVER
Cleveland
Grenada
GRENADA
SUNFLOWER
WEBSTER
Walthall
CLAY
West Point
Columbus
LEFLORE
Greenwood
Carrollton
CARROLL
MONTGOMERY
Winona
Indianola
Starkville
OKTIBBEHO
LOWNDES
Greenville
CHOCTAW
Ackerman
WASHINGTON
Belzoni
HUMPHREYS
HOLMES
Lexington
Durant
ATTALA
Kosciusko
Louisville
WINSTON
NOXUBEE
Macon
Mayersville
LAKE PROVIDENCE
SHARKEY
Rolling Fork
Yazoo City
YAZOO
LEAKE
Carthage
Philadelphia
NESHOBA
De Kalb
KEMPER
MADISON
Canton
ISSAQUENA
SCOTT
Forest
NEWTON
Decatur
LAUDERDALE
Meridian
WARREN
Vicksburg
HINDS
JACKSON
Brandon
RANKIN
JACKSON
River
Raleigh
SMITH
JASPER
Bay Springs
CLARKE
Quitman
CLAIBORNE
Port Gibson
Mendenhall
SIMPSON
COPIAH
Hazlehurst
JEFFERSON
Fayette
Brookhaven
LINCOLN
Monticello
LAWRENCE
Prentiss
JEFFERSON DAVIS
Collins
COVINGTON
Laurel
JONES
Waynesboro
WAYNE
FRANKLIN
Meadville
Hattiesburg
MARION
LAMAR
FORREST
PERRY
New Augusta
GREENE
Leakesville

Field	*County*
Erick	Beckham
Tussey	Carter
Sporn	Lincoln
Zimmerman	Lincoln
Stockton	Love
Yarhola	Seminole

SOUTHWEST TEXAS

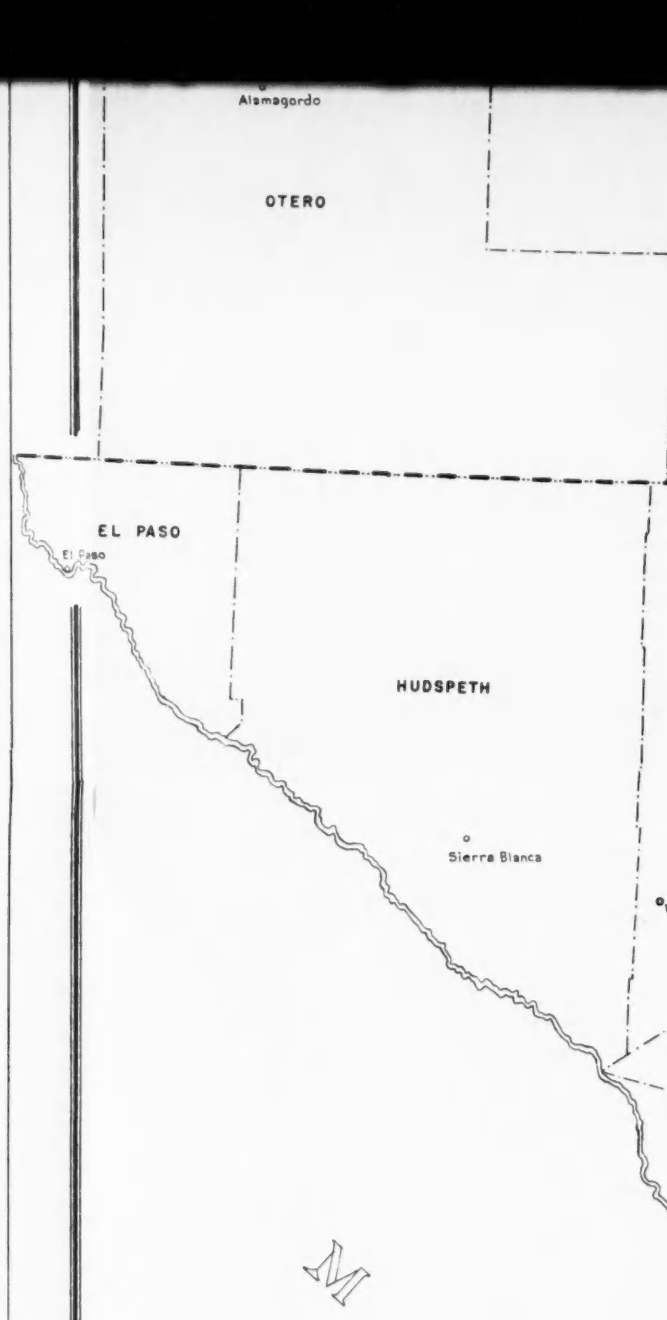
Field	*County*
McCampbell	Aransas
Hicks	Bee
Voss	Bee
Alta Mesa	Brooks
Alta Verde	Brooks
Heyser	Calhoun
Colmena	Duval
Loma Vista	Duval
Palagana	Duval
El Mesquite	Duval
Sullivant	Guadalupe
Nolte	Guadalupe
Weser	Goliad
Maetze	Goliad
La Blanco	Hidalgo
Colorado	Jim Hogg
Bentonville	Jim Wells
Rhode	McMullen
Buckholt	Nueces
Flour Bluff	Nueces
S. Agua Dulce	Nueces
Woods	Starr
Santo Domingo	Starr
Hughes	Victoria
La Sal Viejo	Willacy
Placitas	Zapata

NORTH TEXAS

Field	*County*
Bryhlmeyer	Cook
S. Bryson	Jack
Nugent	Jones
Albany	Shackelford
Larrimore	Young
Graham	Young
E. Hawley	Jones

TEXAS GULF COAST

Field	*County*
Lochridge	Brazoria
Cotton Lake	Chambers
Seabreeze	Chambers
Green's Lake	Galveston
Fairbanks	Harris
Clinton	Harris
Silsbee	Hardin
Nome	Jefferson
Amelia	Jefferson
S. Bay City	Matagorda
Hawkinsville	Matagorda
Segno	Polk
Ace	Polk
Withers	Wharton
Lakeview	Wharton
Spanish Camp	Wharton



ARTESIA
MALJAMAR
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MONUMENT
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EUNICE
OHIO
HENRY
COOPER
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EDDY
Carlsbad
GAINES
SEMINOLE
Seminole
DAWSON
Lamesa
BORDEN
Gail
SCURRY
Snyder
FISHER
Roby
ROTAN
ROYSTON
MEANS
ANDREWS
DEEP ROCK
Andrews
PARKER
FUHRMAN
MARTIN
HOWARD
IATAN
WESTBROOK
Colorado
MITCHELL
COAHOMA
Big Spring
NOLAN
Sweetwater
Stanton
HOWARD-GLASSCOCK
CHALK
SETTLES
HOLT
DAVIDSON-COLEO
SCHARBAUER
NORTH CONDEN
Midland
SCARBOROUGH
GOLDSMITH
JOHNSON
FOSTER
ADDIS
Odessa
LECK
SAYRE
KEYSTONE
WINKLER
Kermit
HENDERSON
HENDRICK
ECTOR
HARPER
MIDLAND
GLASSCOCK
Garden City
STERLING
Sterling City
COKE
Robert Lee
LOVING
WHEAT
Mentone
BROWN & ALTMAN
HALLEY
SEALY
JUDKINS
PENN
CONNELL
O'BRIEN
WADDELL
CULBERSON
Barstow
Pecos
WARD
SAND HILLS
TUBB
GRAND FALLS
MONROE
SOUTH WARD
PLEY
CRANE
CHURCH
McELROY
Crane
UPTON
REAGAN
IRION
Sherwood
MERTZON
San Angelo
TOM GREEN
REEVES
NETTERVILLE
PECOS VALLEY
McCAMEY
SHERR
HURDLE
Rankin
BIG LAKE
Big Lake
SKELLY
GRAYSON
Van Horn
MASTERSON
ROWAN-TONG
WHITE & BAKER
TAYLOR-LINK
YATES
WORLD
POWELL
TODD
Fort Stockton
PECOS
McKENZIE
SCHLEICHER
Eldorado
CROCKETT
Ozona
JEFF DAVIS
Fort Davis
Sonora
SUTTON
Alpine
Marfa
TERRELL
Sanderson
PRESIDIO
BREWSTER
VAL VERDE
Rock Springs
EDWARDS
Del Rio
KINNEY
Brackville
CHITTIM
MAVERICK
Eagle Pass
Rio Grande

STONEWALL
Aspermont
HASKELL
Haskell
THROCKMORTON
Throckmorton
KENT
YOUNG
NEWCASTLE
JACK
Jacksboro
WISE
Decatur
DENTON
Denton
McKinney
COLLIN
Greenville
Sulphur Springs
Graham
BRYSON
S. BEND
BUNGER
HERRON
IVAN
RAINS
Emory
Rockwall
R'KWALL
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LUEDERS
Anson
SHACKELFORD
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BLUFF CR.
Albany
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Breckenridge
CURRY
PALO PINTO
Palo Pinto
PARKER
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TARRANT
Ft. Worth
Dallas
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KAUFMAN
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VAN ZANDT
Canton
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NOODLE CR.
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WORAN
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CROSS PLAINS
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McMILLAN
RUNNELS
Ballinger
Coleman
COLEMAN
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NIGGER CREEK
MEXIA
FREESTONE
Fairfield
RED LAKE
LONG LAKE
CEDAR CREEK
LIMESTONE
Groesbeck
McLENNAN
SOUTH BOSQUE
Waco
Paint Rock
MILLS
Goldthwaite
WHITE
GREEN
CONCHO
Gatesville
CORYELL
SATIN
CHILTON
Marlin
FALLS
BUFFALO
LEON
Centerville
River
McCULLOCH
Brady
SAN SABA
San Saba
LAMPASAS
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WHITE
ROBERTSON
Franklin
MADISON
Madisonville
KITTRELL
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Cameron
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MINERVA
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WALKER
Huntsville
WILLIAMSON
Georgetown
THRALL
BYERSVILLE
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BURLESON
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KIMBLE
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Johnson City
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SISTERDALE
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La Grange
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Hempstead
RACCOON BEND
WALLER
AUSTIN
Bellville
HOCKLEY
River
SAN FELIPE
SATSUMA
REAL
Leakey
BANDERA
Bandera
Boerne
COMAL
New Braunfels
DUNLAP
LULING
SALT FLAT
MANFORD
SALMAR
Seguin
DANST CR.
OTTINE
GUADALUPE
Columbus
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ORCHARD
Richmond
FT. BEND
BIG CREEK
BEXAR
LONE OAK
San Antonio
COOKSEY
GAS RIDGE
ALTA VISTA
ECKERT
MISSION
VON ORMY
SOUTHTON
S. MEDINA
SOMERSET
Gonzales
GONZALES
Hallettsville
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LAKEVIEW
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DE WITT
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MAURITZ
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JACKSON
BAY CITY
Bay City
MARKHAM
BUCKEYE
HAMMAN
MATAGORDA
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SHEPHERDS MOTT
BIG HILL
COW HILL
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CHITTIM
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Jourdanton
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NURSERY
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GOLIAD
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Rio Grande
Carrizo Springs
DIMMIT
PICKETT
CAESAR
N. PETTUS
PETTUS
RUTLEDGE
WEISS
CROWTHER
MARBACH
PLUMMER
JACOB
GRAYBURG
DIRKS
TULETA
W. TULETA
NORMANA
LOBO
THREE RIVERS
CALLIHAM
S. CALLIHAM
STIMMONS
FOLEY
HOLZMARK
Tilden
WENTZ
Catulla
LA SALLE
BEE
Beeville
BEEVILLE
REFUGIO
GRETA
TOM O'CONNOR
REFUGIO
Refugio
McMULLEN
LIVEOAK
George West
FT. MERRILL
McNEILL
N. LUCAS
LUCAS
MATHIS
ARANSAS
SINTON
PLYMOUTH
TAFT
Rockport
Sinton
SAN PATRICIO
ANGELITA
WHITE POINT
RHODES
LOMA ALTA
HAGIST
SEVEN SISTERS
LABBE
EAGLE HILL
SRC
GOVERNMENT WELLS
LOMA VISTA
CHARA MOUSA
NOCA
COLUMBIA
LOMA NOVIA
LEASE HOLDERS
ARMAGOSA
KING
AGUA DULCE
CLARKWOOD
SAXET
Alice
Corpus Christi
T E X A S
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Pittsburg
CAMP
Daingerfield
Linden
MORRIS
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WOOD
Quitman
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MARION
Jefferson
HARRISON
Marshall
Longview
GREGG
SMITH
Tyler
EAST TEXAS
Henderson
RUSK
Neches
BOGGY CREEK
CHEROKEE
Rusk
RUSK
Palestine
LONG LAKE
CAMP HILL
NACOGDOCHES
Nacogdoches
River
HOUSTON
Crockett
Lufkin
ANGELINA
TRINITY
Groveton
KITTRELL
LEE TEX
ROCKLAND
POLK
Livingston
LIVINGSTON
WALKER
Huntsville
Cold Springs
SAN JACINTO
ACE
SEGNO
MONTGOMERY
Conroe
CONROE
CLEVELAND
LIBERTY
SALENDORA
HARDIN
TOM BALL
HUMBLE
NORTH DAYTON
Liberty
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ESPERSON
HOCKLEY
HARRIS
SATSUMA
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CLINTON
Houston
S. HOUSTON
PIERCE JUNCTION
MYKAWA
Richmond
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BLUE RIDGE
SUGARLAND
BIG CREEK
MANVEL
THOMPSON
RABB RIDGE
NASH
BRAZORIA
DAMON
DANBURY
LOCKRIDGE
WEST COLUMBIA
Angleton
HOSKINS
PLEDGER
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STRATTON RIDGE
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BRYAN HTS.
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SOUR LAKE
HULL
MOSS BLUFF
HANKAMER
BARBERS HILL
LOST LAKE
TURTLE BAY
ANAHUAC
COTTON
Anahuac
GOOSE CREEK
CHAMBERS
SEABREEZE
HIGH ISLAND
GALVESTON BAY
GILLOCK
GALVESTON
Galveston
HITCHCOCK
GREENS LAKE
JEFFERSON
FANNETT
LABELLE
BIG HILL
ORANGE
Orange
PORT NECHES
Beaumont
AMELIA
SPINDLETOP
NOME
EDGERLEY
STARKS
SULPHUR
CALCASIEU
VINTON
GILLIS
IOWA
Lake Charles
ENGLISH BAYOU
LOCKPORT
JEFFERSON
ROANOKE
WELSH
DAVIS
Jennings
SO. JENNINGS
E. HACKBERRY
BLACK BAYOU
HACKBERRY
BIG LAKE
SWEET LAKE
CALCASIEU LAKE
CAMERON
CAMERON MEADOWS
Cameron
VERMILION
GUEYDAN
Abbeville
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JENNINGS
Crowley
TEPETATE
BOSCO
Lafayette
LAFAYETTE
ANSE LA BUTE
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NEW IBERIA
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AVERY IS.
IBERIA
JEANERETTE
Franklin
WEEKS IS.
COTE BLANCHE
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VERMILION BAY
BELLE ISLE
CHARENTON
ST. MARTIN
IBERVILLE
BAYOU DE GLAISE
Plaquemine
BAYOU BLUE
BAYOU BOULLON
LAKE MONGOULOI
WHITE CASTLE
ASSUMPTION
Napoleonville
ASCENSION
Donaldsonville
DARROW
CHACAHOULA
TERREBONNE
EAST BAY JUNOP
Houma
LOUISIANA
GULF OF MEXICO
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CADDO
BOSSIER
Benton
COTTON VALLEY
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Homer
HOMER
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Minden
DIXIE
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Shreveport
BELLEVUE
SLIGO
WASKOM
BETHANY
EAST CARTHAGE
PANOLA
Carthage
HOLLY
DESOTO
Mansfield
RED RIVER
Coushatta
DE SOTO
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BENSON
STERRINGER
PICKERING
SHELBY
Center
PLEASANT HILL
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CONVERSE
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San Augustine
NACOGDOCHES
CHIRENO
SAN AUGUSTINE
SABINE
Hemphill
Sabine
River
Natchitoches
NATCHITOCHES
Leesville
VERNON
DRISCOLL
BIENVILLE
Arcadia
LINCOLN
Ruston
UNION
Farmerville
MONROE GAS FIELD
Monroe
Bastrop
OUACHITA
JACKSON
Jonesboro
WINN
Winnfield
Winnsboro
FRANKLIN
Columbia
CALDWELL
URANIA
LA SALLE
Jena
CATAHOULA
Harrisburg
GRANT
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Vidalia
Natchez
ADAMS
Alexandria
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AVOYELLES
Marksville
(BUNKIE CHENEYVILLE)
De Ridder
BEAUREGARD
ALLEN
Oberlin
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Jasper
JASPER
Woodville
TYLER
REEVES
EVANGELINE
PINE PRAIRIE
Ville Platte
ST. LANDRY
Opelousas
BAYOU MALLET
PORT BARRE
POINTE COUPE
WEST FELICIANA
St Francisville
EAST FELICIANA
New Roads
E. BATON ROUGE
W. BATON ROUGE
BATON ROUGE
WILKINSON
Woodville
AMITE
FRANKLIN
Meadville
TENSAS
St Joseph
RICHLAND
Rayville
MADISON
Tallulah
WARREN
Vicksburg
WEST CARROLL
EAST CARROLL
FLOYD
ISSAQUENA
CLAIBORNE
Port Gibson
JEFFERSON
Fayette
Mississippi River

DELTA
Cooper
TALCO
BOWIE
MILLER
Lewisville
STAMPS
LISBON
UNION
El Dorado
EL DORADO
CHAMPAGNELLE
Hamburg
SHLEY
LAFAYETTE
Magnolia
COLUMBIA
HOPKINS
Sulphur Springs
FRANKLIN
Mt Vernon
TITUS
Mt Pleasant
MORRIS
CASS
Daingerfield
Linden
BRADLEY
WEBSTER
HAYNESVILLE
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MOREHOUSE
Oak Grove
Providence
UNION
Farmerville
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St. Francisville
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Jasper
Newton
De Ridder
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PINE PRAIRIE
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SPURGER
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BEAUREGARD
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ST. LANDRY
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WALKER
Huntsville
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LIVINGSTON
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SILSBEE
TEPETATE
BOSCO
BAYOU DE GLAISE
IBERVILLE
GRIMES
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Kountze
HARDIN
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CALCASIEU
Lake Charles
ENGLISH BAYOU
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Jennings
Crowley
LAFAYETTE
St. Martinville
ST. MARTINVILLE
HARDIN
SOUR LAKE
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VINTON
LOCKPORT
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New Iberia
GUEYDAN
Abbeville
JEFFERSON ISLAND
IBERIA
AVERY IS.
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Beaumont
AMELIA
SPINDLETOP
NOME
PORT NECHES
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BIG LAKE
SWEET LAKE
BLACK BAYOU
HACKBERRY
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Cameron
CAMERON MEADOWS
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JEANERETTE
WEEKS IS.
COTE BLANCHE
ST. MARY
VERMILION BAY
TOM BALL
Hempstead
NORTH DAYTON
Liberty
LIBERTY
ESPERSON
HUMBLE
RACCOON BEND
WALLER
HOCKLEY
HARRIS
MOSS BLUFF
HANKAMER
JEFFERSON
FANNETT
BARBERS HILL
LOST LAKE
TURTLE BAY
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SATSUMA
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SAN FELIPE
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GOOSE CREEK
COTTON LAKE
Anahuac
CHAMBERS
BIG HILL
SEABREEZE
PIERCE JUNCTION
MYKAWA
GALVESTON BAY
HIGH ISLAND
ORCHARD
Richmond
BLUE RIDGE
FT BEND
SUGARLAND
BIG CREEK
MANVEL
HASTINGS
DICKINSON
GILLOCK
GALVESTON
THOMPSON
RABB RIDGE
NASH
BRAZORIA
HITCHCOCK
Galveston
BOLING
DAMON
DANBURY
GREENS LAKE
LOCKRIDGE
WEST COLUMBIA
Angleton
HOSKINS
WITHERS
PLEDGER
STRATTON RIDGE
BAY CITY
CLEMENS
MARKHAM
Bay City
ALLEN
BRYAN HTS
HAMMAN
MATAGORDA
HAWKINSVILLE
SHEPHERDS MOTT
GULF OF MEXICO

Lexington
Durant
Mayersville
LAKE PROVIDENCE
Providence
SHARKEY
Rolling Fork
Yazoo City
YAZOO
EAST CARROLL
FLOYD
ISSAQUENA
MADISON
Canton
LEAKE
Carthage
Philadelphia
NESHOBA
De Kalb
KEMPER
Tallulah
MADISON
WARREN
VICKSBURG
HINDS
JACKSON
Brandon
RANKIN
JACKSON
SCOTT
Forest
NEWTON
Decatur
LAUDERDALE
Meridian
River
TENSAS
St. Joseph
CLAIBORNE
Port Gibson
COPIAH
Hazlehurst
Raleigh
SMITH
SIMPSON
Mendenhall
JASPER
Bay Springs
CLARKE
Quitman
JEFFERSON
Fayette
Natchez
ADAMS
FRANKLIN
Meadville
Brookhaven
LINCOLN
Monticello
LAWRENCE
Prentiss
JEFFERSON DAVIS
Collins
COVINGTON
Laurel
JONES
Waynesboro
WAYNE
Mississippi
WILKINSON
Woodville
AMITE
Liberty
McComb
PIKE
Tylertown
WALTHALL
MARION
Columbia
LAMAR
Purvis
Hattiesburg
FORREST
PERRY
New Augusta
GREENE
Leakesville
WEST FELICIANA
St. Francisville
EAST FELICIANA
Clinton
HELENA
Greensburg
WASHINGTON
Franklinton
Poplarville
PEARL RIVER
Wiggins
STONE
Lucedale
GEORGE
Amite
TANGIPAHO
Picayune
HARRISON
JACKSON
E. BATON ROUGE
W. BATON ROUGE
BATON ROUGE
LIVINGSTON
Springville
ST. TAMMANY
Covington
HANCOCK
Gulf Port
Biloxi
Pascagoula
Bay St. Louis
IBERVILLE
Plaquemine
BAYOU BLUE
ASCENSION
DARROW
SORRENTO
Lake Pontchartrain
JOHN THE BAPTIST
ST. JAMES
Convent
ORLEANS
NEW ORLEANS
LAKE MONGOULOIS
WHITE CASTLE
NAPOLEONVILLE
ASSUMPTION
Napoleonville
Kahnville
ST. CHARLES
JEFFERSON
St. Bernard
ST. BERNARD
ST. MARTIN
ST. MARY
Thibodaux
CHACAHOULA
PLAQUEMINES
LAFITTE
VALENTINE (HARANGUE)
Houma
LA FOURCHE
Pt. A La Hache
LAKE HERMITAGE
HOUMA TOWNSITE
BELLE ISLE
TERREBONNE
HOUMA
LAKE WASHINGTON
FOUR ISLE
LAKE BARRE
LEEVILLE
VENICE
DOG LK.
BAY ST. ELAINE
EAST BAY JUNOP
LAKE PELTO
CAILLOU ISLAND
GARDEN ISLAND BAY
Mobile
MEXICO

Bentonville	Jim Wells
Rhode	McMullen
Buckholt	Nueces
Flour Bluff	Nueces
S. Agua Dulce	Nueces
Woods	Starr
Santo Domingo	Starr
Hughes	Victoria
La Sal Viejo	Willacy
Placitas	Zapata

NORTH TEXAS

Field	*County*
Bryhlmeyer	Cook
S. Bryson	Jack
Nugent	Jones
Albany	Shackelford
Larrimore	Young
Graham	Young
E. Hawley	Jones

TEXAS GULF COAST

Field	*County*
Lochridge	Brazoria
Cotton Lake	Chambers
Seabreeze	Chambers
Green's Lake	Galveston
Fairbanks	Harris
Clinton	Harris
Silsbee	Hardin
Nome	Jefferson
Amelia	Jefferson
S. Bay City	Matagorda
Hawkinsville	Matagorda
Segno	Polk
Ace	Polk
Withers	Wharton
Lakeview	Wharton
Spanish Camp	Wharton

WEST TEXAS

Field	*County*
Bennett	Yoakum
Dobbs	Ward
Duggan	Cochran
Estes	Ward
Foster	Ector
Henderson	Winkler
Keyes	Winkler
Seminole	Gaines

EAST TEXAS

Field	*County*
Talco	Titus
Sulphur Bluff	Hopkins

JEFF DAVIS

Fort Davis

Marfa

Alpine

PRESIDIO

BREWSTER

PECOS

McKENZIE

TERRELL

Sanderson

CROCKETT

Ozona

Eldorado

Sonora

SUTTON

VAL VERDE

Del Rio

Rock Springs

EDWARDS

KINNEY

Brackville

CHITTIM

MAVERICK

Eagle Pass

Rio Grande

TEXAS

SCHLEICHER
Eldorado
MENARD
Menard
MASON
Mason
LLANO
Llano
BURNET
Burnet
WILLIAMSON
Georgetown
MILAM
Cameron
TRACY
MINERVA
ROCKDALE
BRAZOS
Bryan
BURLESON
Caldwell
THRALL
BYERSVILLE
CHAPMAN
Sonora
SUTTON
KIMBLE
Junction
GILLESPIE
Fredericksburg
BLANCO
Johnson City
TRAVIS
AUSTIN
KIMBRO
MANDA
LEE
Giddings
CLAY CREEK
WASHINGTON
Brenham
BRENHAM
AUSTIN
Bellville
BASTROP
N. CEDAR CREEK
CEDAR CREEK
Bastrop
YOST
HILBIG
CARROLL
LYTTON SPRINGS
NORTH DALE
DALE
BROWN
BUCHANAN
BRANYON
CALDWELL
LARRE
MOORE
Lockhart
San Marcos
FAYETTE
La Grange
Rock Springs
EDWARDS
LOVE
KERR
Kerrville
SISTERDALE
KENDALL
Boerne
HAYS
COMAL
New Braunfels
REAL
Leakey
BANDERA
Bandera
DUNLAP
LULING
SALT FLAT
MANFORD
SALMAR
Seguin
DANST CR.
OTTINE
GUADALUPE
Columbus
COLORADO
Del Rio
KINNEY
Brackville
UVALDE
Uvalde
MEDINA
Hondo
TAYLOR
CHICON LAKE
ADAMS
INA
BEXAR
LONE OAK
San Antonio
COOKSEY
GAS RIDGE
ALTA VISTA
ECKERT
MISSION
VON ORMY
SOUTHTON
S. MEDINA
SOMERSET
WILSON
Floresville
FLORESVILLE
Gonzales
GONZALES
Hallettsville
LAVACA
GARWOOD
WHARTON
LAKEVIEW
PICKETT
DE WITT
Cuero
LOUISE
EDNA
MAURITZ
Edna
JACKSON
BUCKE
COW HILL
CHITTIM
Batesville
ZAVALLA
FRIO
Pearsall
PEARSALL
DOERING
ATASCOSA
Jourdanton
Karnes City
KARNES
WESER
SLICK
NURSERY
VICTORIA
Victoria
VANDERBILT
KEERAN
MAVERICK
Eagle Pass
DIAMOND HALF
BURNELL
CABEZA CREEK
FANNIN
HORDES CR
E. GOLIAD
Goliad
COLETTO
HUGHES
PLACEDO
PORT LAVACA
LA BAHIA
GOLIAD
CAESAR
PICKETT
N. PETTUS
PETTUS
WEISS
HEYSER
FADDIN
CROWTHER
MARBACH
PLUMMER
RUTLEDGE
GRAYBURG
JACOB
DIRKS
LOBO
TULETA
W. TULETA
CALHOUN
O'CONNOR
CALLIHAM
TMREE
VOSS
NORMANA
RIVERS
FOLEY
HOLZMARK
Carrizo Springs
DIMMIT
Cotulla
LA SALLE
Tilden
WENTZ
CALLIHAM
STIMMONS
BEE
Beeville
BEEVILLE
McMULLEN
LIVEOAK
George West
FT. MERRILL
Mc NEILL
N. LUCAS
LUCAS
REFUGIO
GRETA
TOM O'CONNOR
Refugio
ARANSAS
MATHIS
SINTON
PLYMOUTH
TAFT
Rockport
BUCKINGHAM
ARANSAS
Sinton
SAN PATRICIO
ANGELITA
WHITE POINT
RHODES
LOMA ALTA
SANCOA
ARMAGOSA
HAGIST
SEVEN SISTERS
LABBE
EAGLE HILL
SRC
GOVERNMENT WELLS
LOMA VISTA
CHARA MOUSA
MOCA
LOMA NOVIA
COLUMBIA
LEASE HOLDERS
SARNOSA
HOFFMAN
San Diego
WEBB
Alice
JIM WELLS
KING
AGUA DULCE
SAXET
CLARKWOOD
SAXET MTS.
BALDWIN
Corpus Christi
SANTA CLARA
NUECES
FLOUR BLUFF
LOPEZO
KOEHLER
DUVAL
CAROLINA-TEXAS
PALANGANA DOME
STRATTON
LAUREL
MIRANDO CITY
REISER
W. COLE
DRISCOLL
PIEDRAS PINTAS
COLE-BRUNI
Laredo
SCHOTT
BRUNI
EL MESQUITE
PREMONT
Kingsville
KINGSVILLE
KLEBERG
AVIATOR
Hebbronville
MIRANDO VALLEY
ALBERCAS
WRAY
BLAS
URIBE
CUELLAR
HEUNE
PALO BLANCO
Falfurrias
GYP HILL
Sarita
JENNINGS
MARTINEZ
ALTA VERDE
RANDADO
COMITAS
ESCOBAS
JIM HOGG
BROOKS
ZAPATA
HAYNES
KENEDY
COLORADO
ALTA MESA
Zapata
CHARCO REDONDO
CUEVITAS
LOPENO
STARR
BARBACOAS
Raymondville
LASALVIEGA
WILLACY
ROMA
RIO GRANDE CITY
HIDALGO
Rio Grande
SANTO DOMINGO
SAN FORDYCE
MESTINAS
LABLANCA
Edinburg
MERCEDES
CAMERON
Brownsville
Rio Grande River
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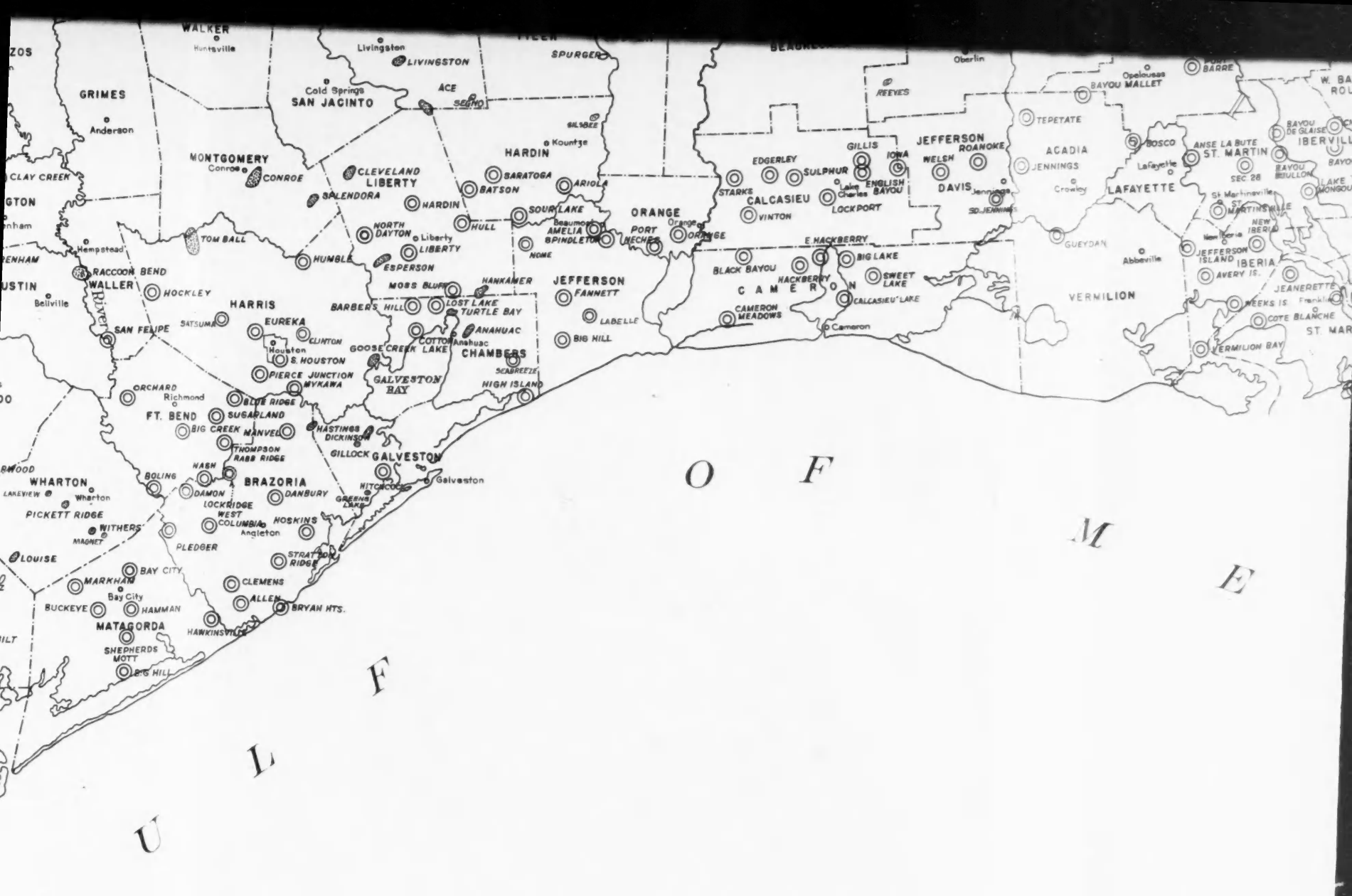

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SCALE
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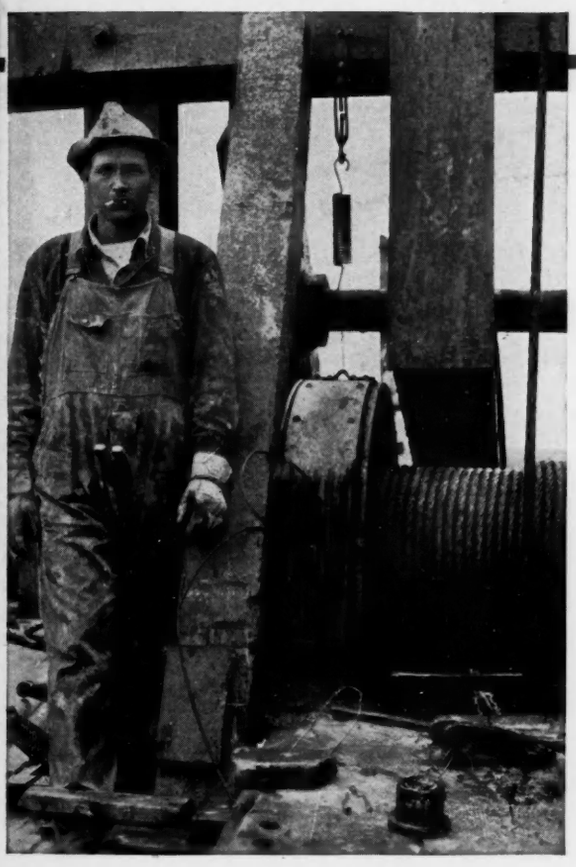
HERE'S ONE FOR THE RECORD BOOK READ WHY "CURLY" TRAXLER SAYS...



The above photo of Mr. H. G. "Curly" Traxler, driller, was taken at the H. H. Howell Drilling Company's rig No. 2 at Clarkwood, Texas.

"In All My Years of Drilling I Have Never Seen Its Equal".

From Mr. H. G. "Curly" Traxler, driller for the H. H. Howell Drilling Co., of Clarkwood, Texas, comes this report on the remarkable service he is receiving from one of our 1⅛", 6x19, "HERCULES" (Red Strand), Seale Construction, Wire Rope Center, Preformed Rotary Lines.

> "This line was put on during a fishing job, at which time it was necessary to pull to such an extent that two weight indicators were pulled completely apart. No one will ever know just how much pull was put on this line, but we do know that it must have been many hundreds of thousands of pounds. After using this same line for 48 days of fishing, it was then used to drill 6 complete wells (two 5,800 feet, two 4,575 feet and two 4,450 feet), all double reamed. This line is still on the job and going strong."

Our thanks to Mr. Traxler and to the thousands of other users, who are enjoying similar experiences. You too, will find that "HERCULES" (Red Strand) Wire Lines are gluttons for work.

Made Only By **A. LESCHEN & SONS ROPE CO.** Established 1857

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may differ considerably in "specific" productivity, they claimed. These gentlemen concluded with the observation that application of relations that may be found between rates of fluid production and differential pressures in producing sands will aid in developing a better understanding of reservoir performance and the related problem of well spacing.

The paper closed with the plea that since the straight-line relation discussed therein was merely an empirical statement of the facts found on analyzing limited field data and might not be supported completely on a rational basis, the Bureau of Mines engineers invite contributions of oil well production data and subsurface pressures and temperature traverses to be used in continuing their check and further analysis of what appears to be a useful relation.

★ Little or no actual waste, says Porter

William W. Porter II, Los Angeles, in a paper on "Some Fallacies in Oil Conservation Programs," said he was of the opinion that little or no oil has actually been wasted or is being wasted, and that conservation programs, legislation, and constitutional changes based upon the assumption of such waste are unwarranted and unnecessary.

"All the oil produced has been used," he said, "and the rest is still in the ground. The basis for the conclusion that oil has been wasted is the theoretical one that a certain amount of oil that might have been produced has been rendered permanently unrecoverable, a basis not generally admitted as an unqualified fact.

"Gas has been wasted, but gas waste problems should be solved by simple regulatory measures similar to those requiring protection of oil zones from water." This, he claimed, did not necessarily call for legislation.

Oil Waste Versus Money Waste

"The confusion seems to have arisen by failure to differentiate between waste of oil and waste of money," Porter stated.

He pointed out that hectic drilling programs, close spacing may have recovered more oil from the ground than 10, 20, or 40-acre spacing, particularly in fields involving the more viscous oils, but that the spacing idea is undoubtedly wiser, i. e., more profitable, for the operator. Spaced wells, he contended, will yield far greater profit per dollar invested, but, he argued, "there seems to be little evidence that close spacing will result in less ultimate recovery.

"Of course, closer spacing will also result in greatly diminished profit, but if approximately the same amount of oil could be recovered either way, then the problem certainly is not one of conservation, but a matter of business co-operation."

Porter said he did not disagree with the generally accepted principles of well spacing and production, but that he did wish to point out that failure to conform to those principles did not indicate waste of oil and a conse-

[*Continued on page 206*]

Free Enterprise

PETTENGILL URGES INDUSTRY SET HOUSE IN ORDER AT ONCE

NEW YORK.

PETROLEUM, as a natural resource industry, is in the front line trenches of private enterprise along with such recognized public utilities as railroads and electricity, according to Samuel B. Pettengill, member of Congress from the Third Indiana District, who in an address on "The Future of Free Enterprise in the Oil Industry," delivered February 18, 1937, at the Annual Dinner of the Petroleum Division of the American Institute of Mining and Metallurgical Engineers, held in New York City, pointed out that the zero hour for these three industries may be no further distant than 10 years.

"If they withstand the attack," Representative Pettengill said, "all enterprise will be their debtor. If they fail, nothing now in private hands can feel secure."

In reviewing some of the legislation that had been brought forth, but fortunately not yet enacted, the congressman thought it necessary to remind his audience that when Uncle Sam experimented with alcoholic prohibition the buyer was not made a potential felon. "Not so under the Thomas-Disney bill," he continued. "The receiver as well as the seller flirted with prison. Gasoline became more deadly than Demon Rum."

"The bill," said Representative Pettengill, "did not become law. The industry did not 'go to hell in 30 days' as promised. Other methods with no direct Federal control, without destruction of the autonomy of the states, without amending the Federal Constitution, and without government ownership, federal or state, were found which have, I believe, become fairly effective.

"Whether in the days to come a similar state of facts will arise, I do not know," he continued. "Whether another great pool like East Texas will ever be pierced by a driller's bit, you do not know. Whether there will ever be another Thomas-Disney bill, none of us can know.

Other Federal Control Efforts

"We can, however, assume, for the sake of prudence at least," he warned, "that a day will come when there will be another demand for Federal control of industry, not perhaps because of flush production demoralizing markets but because of threatened or actual inadequacy of supply to meet the insistent demands of 130,000,000 Americans at peace or a nation at war."

As the first of his suggestions as to what might be done by the industry to protect its freedom, Representative Pettengill cited that industrial statesmanship must do as much as political statesmanship can promise—and more.

"Any course short of that is gambling with destiny," he asserted. "If and when there is acute demand, short supply and no good substitute, one lives in a fool's paradise if he does not think he Nation will commandeer this industry as it did the railroads in 1917 and without, perhaps, returning it to its owners if and when the emergency is over."

"The oil industry in private hands has assumed the responsibility of providing the nation with its needed oil. It will be held to that responsibility. To discharge it the industry as an industry must, let me repeat, do such a good job that no reasonable fault can be found with it by the advocates of nationalization," he declared.

Recovery Efficiency Important

Congressman Pettengill pointed out that a good record was being made in refining, and a good but not so good record in distribution. But the efficiency of removal of oil from the ground is the problem of vital importance at which the industry in private hands is falling down. That he calls the Achilles heel of the oil industry.

"The waste, the low efficiency in removal from the natural reservoirs is notorious," he said. "The public is fully acquainted with the record. It is hard to defend at any time and will be impossible to defend when and if the pinch of short supply and rapidly rising prices is felt.

"If that day comes," he continued, "and again I say it is only prudent to consider that possibility, what answer or excuse will private industry give to the imperious question why it left from 5 to 10 barrels of petroleum in the ground for every one removed? What answer will it give to the charge that wanton waste of natural gas which has been described by friends of the industry as 'a scandal for years'?"

Alluding to the "Law of Capture," according to which oils in the sands beneath the earth may be had by anyone who drills and captures them, "Change in the law of capture to better harmonize petroleum with pro patria sounds like a legal problem," said the congressman.

"I assure you, gentlemen," he continued, "that it is more fundamentally an engineering problem. It is your job to build a scientific foundation upon which to erect the legal superstructure. When, and if, the courts and legislatures can be shown that changes in the capture rule will be brought to serve better not only the surface land owner, but the long future of America."

Congressman Pettengill's definition of free enterprise which he points out is non-existent literally in modern society, and did not even obtain under the ancient common law, is set forth as follows:

"By free enterprise we mean substantially a system for the production and distribution of wealth, owned and managed by private individuals in pursuit of profits, a system which struggles for customers in the market place through the competition of excellence,

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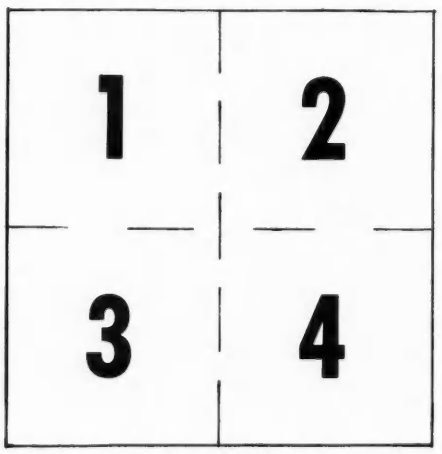

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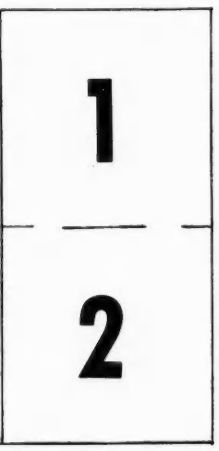
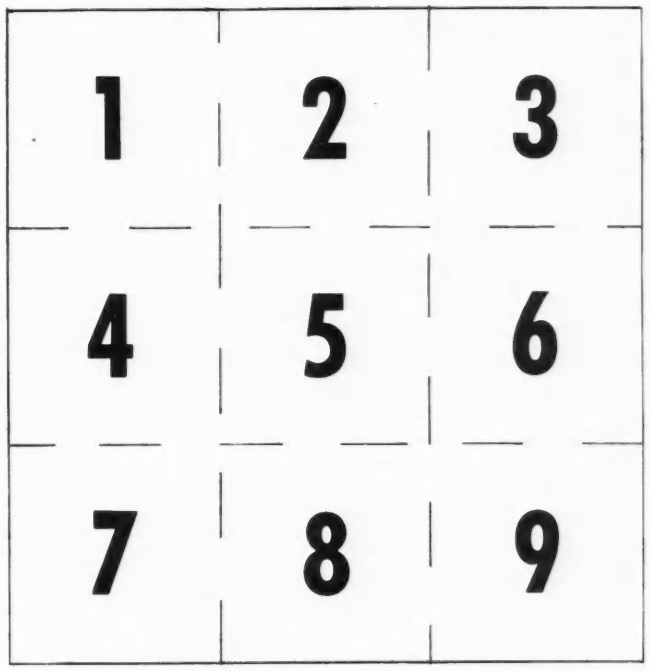




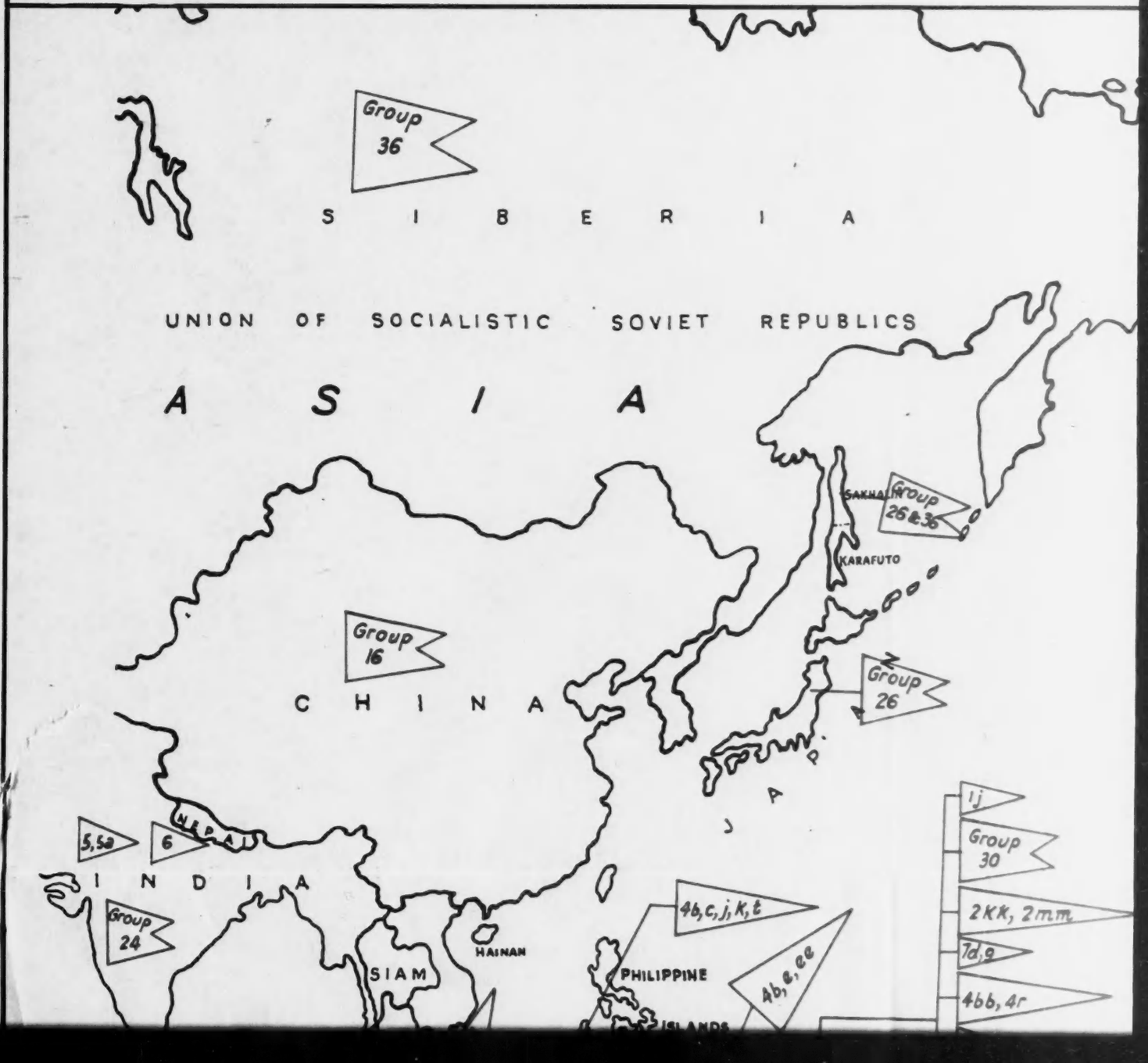
World Crude Oil Production,

Complete Production

(Sources—*Mineral Resources of the United States*, 1918,
The figures of *Mineral Resources*, 1918, have been repla

YEAR	Rumania	United States	Italy	Canada	Russia except Sakhalin	Poland (Galacia)	Japan and Taiwan	Germany	India (British)	Nether-land India	Peru	Mexico	Argentina	Trin
1927	26,368,000	901,129,000	47,000	477,000	77,018,000	5,342,000	1,789,000	663,000	8,032,000	27,459,000	10,127,000	64,121,000	8,630,000	5,38
1928	30,773,000	901,474,000	46,000	624,000	[c]84,745,000	5,492,000	1,944,000	630,000	8,741,000	32,118,000	12,006,000	50,151,000	9,070,000	7,68
1929	34,758,000	1,007,323,000	45,000	1,117,000	[c]99,507,000	4,988,000	2,023,000	704,000	8,747,000	39,279,000	13,422,000	44,688,000	9,391,000	8,71
1930	42,759,000	898,011,000	59,000	1,522,000	[c]125,555,000	4,904,000	2,047,000	1,222,000	8,887,000	41,729,000	12,449,000	39,530,000	9,002,000	9,41
1931	49,741,000	851,081,000	124,000	1,543,000	162,842,000	4,662,000	1,966,000	1,608,000	8,715,000	35,539,000	10,089,000	33,039,000	11,709,000	9,74
1932	53,815,000	785,159,000	208,000	1,044,000	154,367,000	4,116,000	1,630,000	1,608,000	8,817,000	39,001,000	9,899,000	32,805,000	13,139,000	10,12
1933	54,020,000	905,656,000	204,000	1,145,000	154,840,000	4,072,000	1,455,000	1,665,000	8,743,000	42,606,000	13,257,000	34,001,000	13,691,000	9,56
1934	62,063,000	908,065,000	151,000	1,417,000	174,318,000	3,913,000	1,834,000	2,187,000	10,503,000	46,925,000	16,314,000	38,172,000	14,024,000	10,88
1935[p]	58,695,000	993,942,000	153,000	1,447,000	176,688,000	3,603,000	1,875,000	2,992,000	9,225,000	42,571,915	17,067,000	40,240,563	14,285,000	11,67
1936[p]	61,471,172	1,097,640,000	150,000	1,482,000	215,578,060	3,579,000	2,000,000	3,080,400	9,598,600	42,217,900	17,541,600	40,368,183	14,850,000	13,02
All Years through 1936	722,335,348	18,690,025,719	2,467,718	38,074,770	3,595,399,967	247,106,251	71,756,035	34,292,441	263,839,965	726,140,436	205,054,455	1,817,314,908	152,369,001	128,84

[a] Figures beginning with this year are shown in nearest thousand barrels, being from *Mineral Resources* of 1930 and 1931; and from *Minerals Yearbook* in subseq
[b] No more data available.
[c] Year ended September 30.



de Oil Production, by Countries, by Years, for Past 10 Years

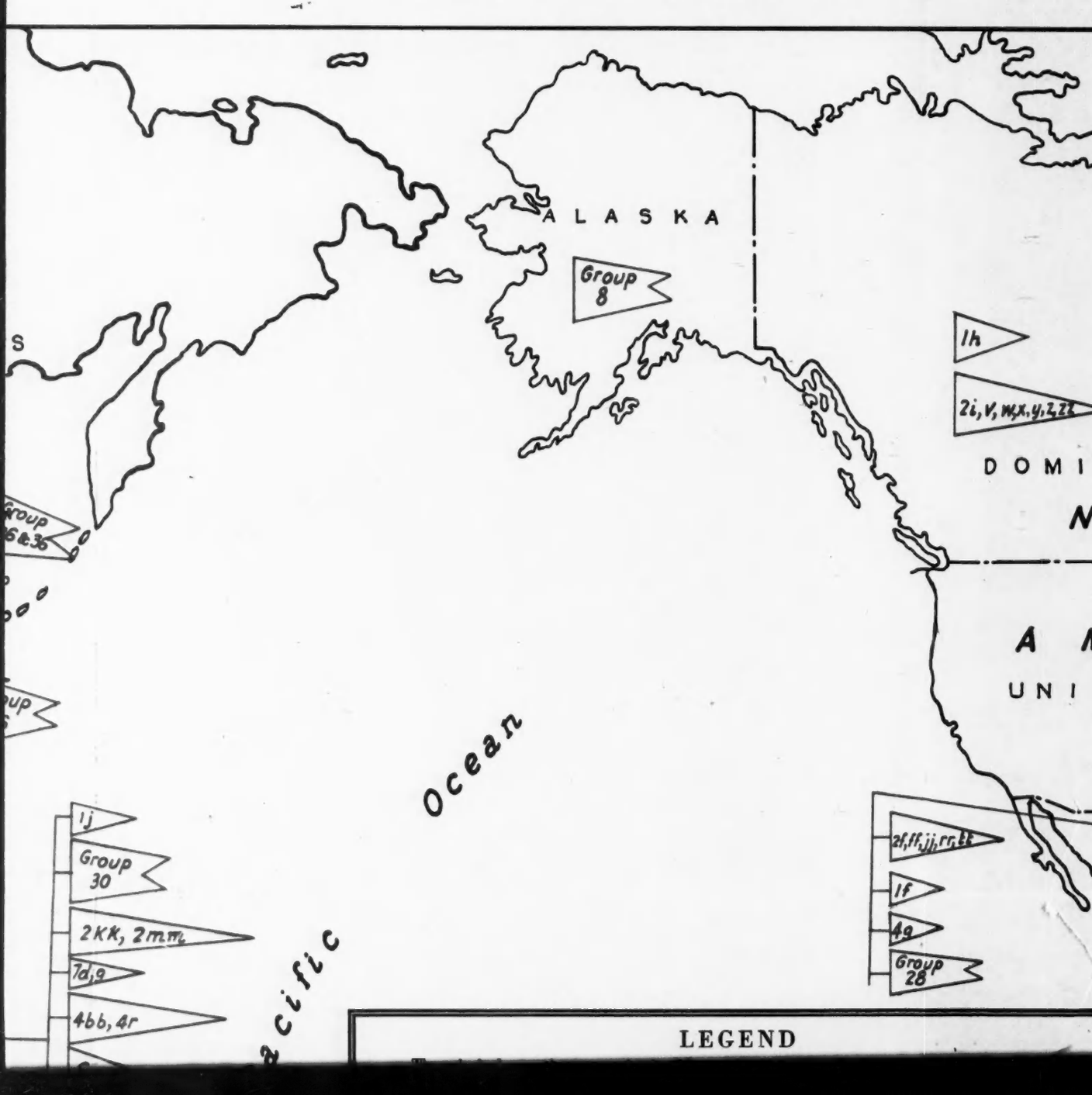
Complete Production History of World, in Barrels of 42 U. S. Gallons

urces of the United States, 1918, 1930 and 1931; *Minerals Yearbook*, 1932, 1933 and subsequent years. Note: Resources, 1918, have been replaced here by figures from later reports, in cases where revisions have been made.)

Peru	Mexico	Argentina	Trinidad	Egypt	Iran (Persia)	British Borneo (Sarawak and Brunei)	Algeria	Ecuador	Venezuela	France	England	Czecho-slovakia	Sakhalin	Colombia	Iraq
0,127,000	64,121,000	8,630,000	5,380,000	1,267,000	39,688,000	4,943,000	8,000	537,000	63,134,000	504,000	2,000	112,000	440,000	15,014,000	[A]338,000
2,006,000	50,151,000	9,070,000	7,684,000	1,842,000	43,461,000	[D]5,223,000	8,000	1,084,000	105,749,000	512,000	1,000	94,000	677,000	19,897,000	713,000
3,422,000	44,688,000	9,391,000	8,716,000	1,868,000	42,145,000	5,290,000	20,000	1,381,000	137,472,000	535,000	[E]	93,000	[C]1,134,000	20,385,000	798,000
2,449,000	39,530,000	9,002,000	9,419,000	1,996,000	45,833,000	4,907,000	16,000	1,553,000	136,669,000	523,000	[E]	157,000	[C]1,805,000	20,346,000	909,000
0,089,000	33,039,000	11,709,000	9,744,000	2,038,000	44,376,000	3,854,000	[E]	1,762,000	116,613,000	527,000	[E]	134,000	2,734,000	18,237,000	900,000
9,899,000	32,805,000	13,139,000	10,126,000	1,895,000	49,471,000	3,796,000	[E]	1,597,000	116,541,000	530,000	[E]	126,000	2,631,000	16,414,000	836,000
3,257,000	34,001,000	13,691,000	9,561,000	1,663,000	54,392,000	4,490,000	[E]	1,620,000	117,720,000	562,000	[E]	122,000	2,338,000	13,158,000	917,000
5,314,000	38,172,000	14,024,000	10,894,000	1,546,000	57,851,000	5,140,000	[E]	1,637,000	136,103,000	557,000	[E]	178,000	2,881,000	17,341,000	7,689,000
7,067,000	40,240,563	14,285,000	11,678,637	1,274,000	57,304,000	5,000,000	[E]	1,731,882	151,523,000	535,000	[E]	200,000	2,857,000	17,597,655	27,014,900
7,541,600	40,368,183	14,850,000	13,022,000	1,231,700	57,363,600	4,597,000	[E]	1,851,600	165,452,400	532,120	[E]	185,000	2,851,000	20,512,800	29,405,815
5,054,455	1,817,314,908	152,369,001	128,846,028	30,792,700	710,286,600	72,944,000	143,000	15,672,482	1,321,786,400	9,183,120	20,000	2,190,000	20,714,000	187,613,455	69,520,715

nd 1931; and from *Minerals Yearbook* in subsequent years.

[D] Beginning of production from Brunei.
[E] Less than one thousand barrels.
[F] For 1935 and 1936 figures for countries outside the United States are preliminary, having been estimated by The OIL WEEKLY, with aid of gov



Iraq	Bolivia	Bahrein Island	Other Countries	Total World	Percent Produced by United States	YEAR
^338,000	.....	.....	13,000	1,262,582,000	71	1927
713,000	.....	.....	15,000	1,324,774,000	68	1928
798,000	*	.....	38,000	1,485,867,000	68	1929
909,000	^56,000	.....	40,000	1,411,905,000	64	1930
900,000	25,000	.....	54,000	1,373,656,000	62	1931
836,000	44,000	.....	62,000	1,309,677,000	60	1932
917,000	31,000	31,000	71,000	1,442,112,000	63	1933
7,689,000	159,000	285,000	96,000	1,522,243,000	59.7	1934
27,014,900	163,380	1,264,800	102,000	1,641,030,732	60.5	.....1935r
29,405,815	160,000	3,400,000	108,000	1,810,229,950	60.6	.....1936r
69,520,715	719,380	4,980,800	1,220,000	29,142,809,694	64.1	All Years ...through 1936

with aid of government and other sources.

GREENLAND

JAN MAYEN

ICELAND

GREENLAND

BAFFIN ISLAND

SOUTHAMPTON

Group 15

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OMINION OF CANADA

NORTH

AMERICA

UNITED STATES

NEWFOUNDLAND

CAPE BRETON Is.

Atlantic

MEXICO

Group 18

CUBA

WEST INDIES

HAITI

JAMAICA

BR. HONDURAS

GUAT.

HOND.

SALVADOR

NICARAGUA

2n

4cc

Group 40

2g, h, u

1g

4d, f, m

2gg

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Group 22

Group 19

6, 6al

2p

1i

1z

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Group 14

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Group 21

Group 29

IRISH FREE STATE

GREAT BRITAIN

NETH.

SELG.

FRANCE

Group 37

CORSICA

SARDIN.

SPAIN

MOROCCO

ALGERIA

Group 10

RIO DE ORO

FRENCH WEST AFRICA

FRENCH SUDAN

SENEGAL

UPPER VOLTA

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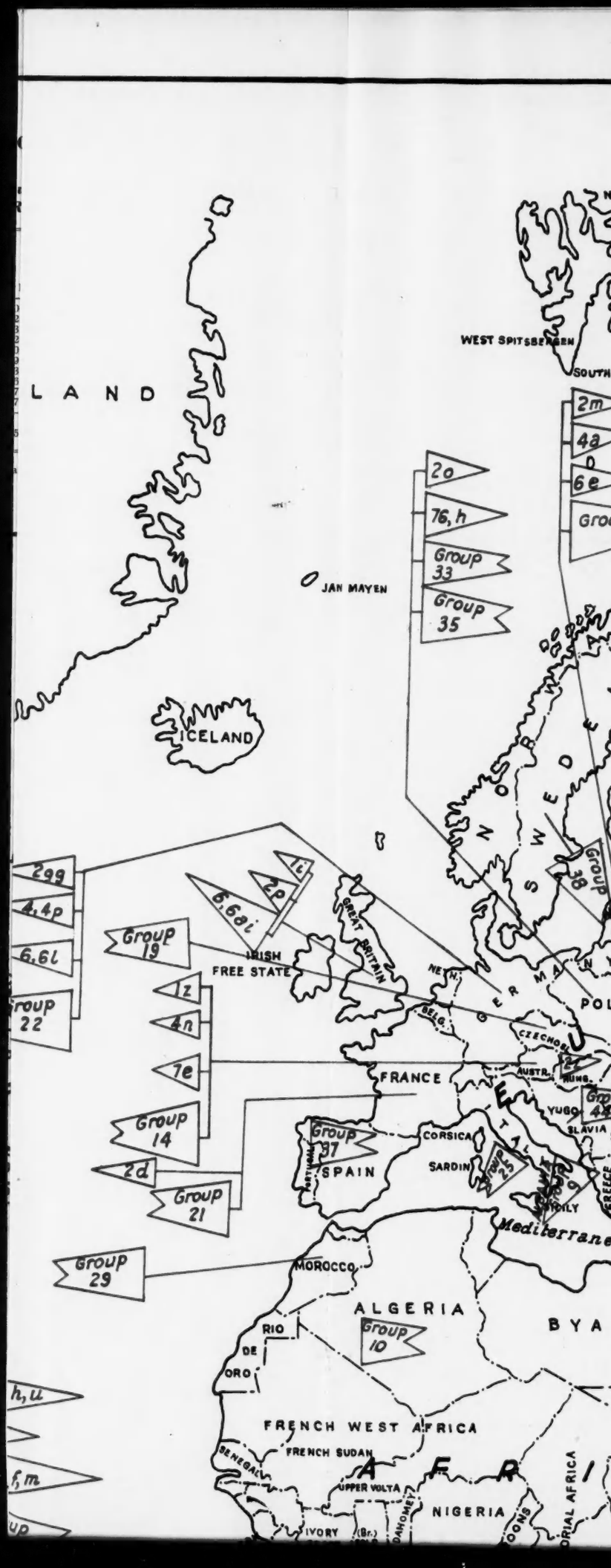
Group 33

Group 35

WEST


WEST SPITSBERGEN
LAND
JAN MAYEN
ICELAND
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Group 33
Group 35
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4, 4p
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Group 22
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IRISH FREE STATE
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FRANCE
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SARDIN
MOROCCO
ALGERIA
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RIO DE ORO
FRENCH WEST AFRICA
FRENCH SUDAN
SENEGAL
UPPER VOLTA
IVORY
NIGERIA
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Group 38
Group 37
Mediterrane

FRANZ JOSEF LAND

NORTH EAST ISLAND

SVALBARD

KING CHARLES Is.

SOUTH CAPE

2m

4a

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Group

Barents Sea

UNION OF SOCIALISTIC SOVIET REPUBLICS

(R U S S I A)

ESTONIA

LATVIA

LITH

POLAND

ROMANIA

Group 40

YUGO SLAVIA

BULGARIA

Group 41

TURKEY

ASIA MINOR

Group 23

SYRIA

IRAQ

6,6b

PERSIA

5d

3c

AFGHANISTAN

1a,b

BALUCHISTAN

INDIA

EGYPT

4o

ARABIA

1a,5,k

3d

6,6d

ANGLO-EGYPTIAN SUDAN

ETHIOPIA

Arabian Sea

BAHREIN ISLAND

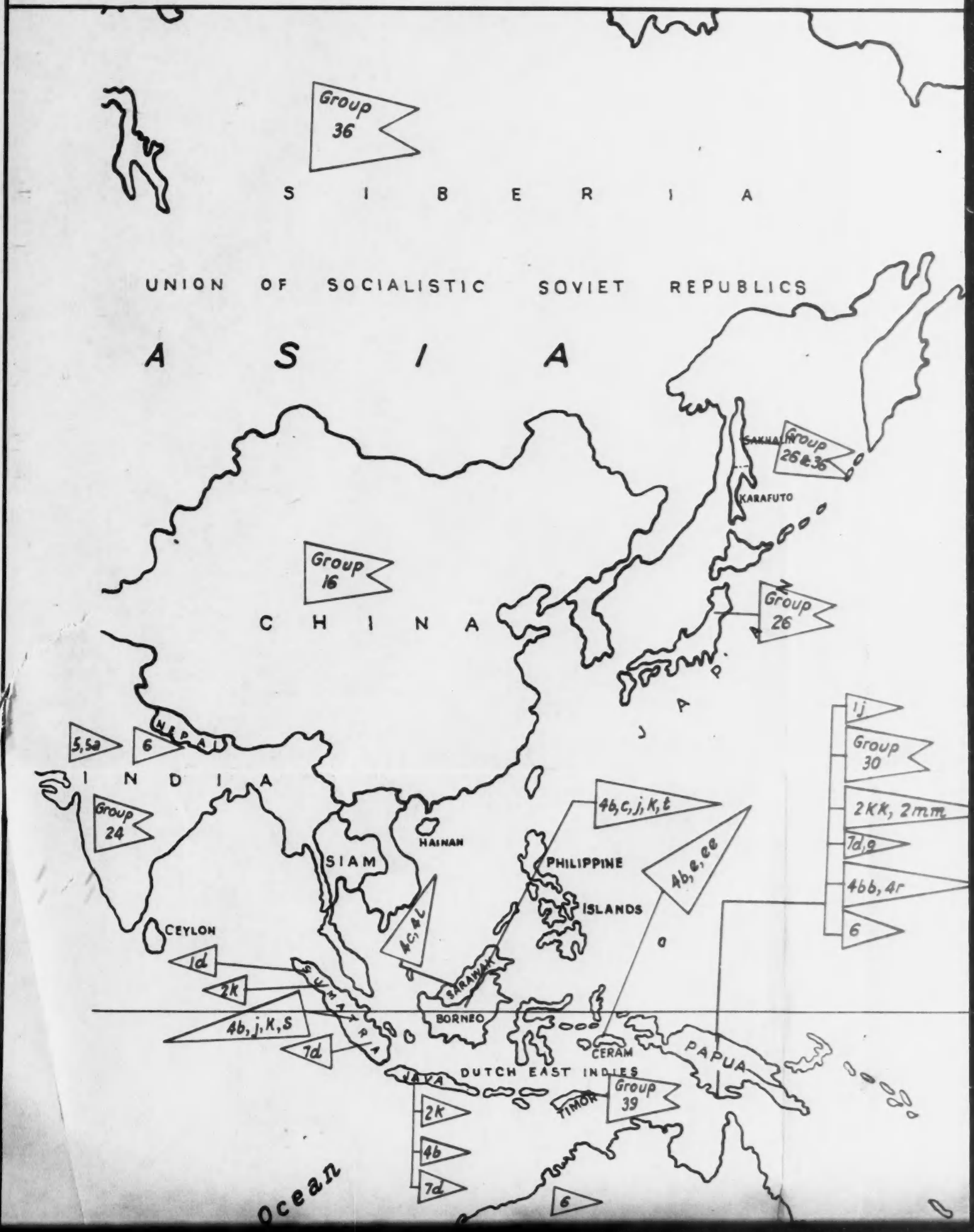
A S I A

TURKESTAN

Group 38

YEAR	Rumania	United States	Italy	Canada	Russia except Sakhalin	Poland (Galacia)	Japan and Taiwan	Germany	India (British)	Nether-land India	Peru	Mexico	Argentina
1927	26,368,000	901,129,000	47,000	477,000	77,018,000	5,342,000	1,789,000	663,000	8,032,000	27,459,000	10,127,000	64,121,000	8,630,000
1928	30,773,000	901,474,000	46,000	624,000	[c]84,745,000	5,492,000	1,944,000	630,000	8,741,000	32,118,000	12,006,000	50,151,000	9,070,000
1929	34,758,000	1,007,323,000	45,000	1,117,000	[c]99,507,000	4,988,000	2,023,000	704,000	8,747,000	39,279,000	13,422,000	44,988,000	9,391,000
1930	42,759,000	898,011,000	59,000	1,522,000	[c]125,555,000	4,904,000	2,047,000	1,222,000	8,887,000	41,729,000	12,449,000	39,530,000	9,002,000
1931	49,741,000	851,081,000	124,000	1,543,000	162,842,000	4,662,000	1,966,000	1,608,000	8,715,000	35,539,000	10,089,000	33,039,000	11,709,000
1932	53,815,000	785,159,000	208,000	1,044,000	154,367,000	4,116,000	1,630,000	1,608,000	8,817,000	39,001,000	9,899,000	32,805,000	13,139,000
1933	54,020,000	905,656,000	204,000	1,145,000	154,840,000	4,072,000	1,455,000	1,665,000	8,743,000	42,606,000	13,257,000	34,001,000	13,691,000
1934	62,063,000	908,065,000	151,000	1,417,000	174,318,000	3,913,000	1,834,000	2,187,000	10,503,000	46,925,000	16,314,000	38,172,000	14,024,000
1935[r]	58,695,000	993,942,000	153,000	1,447,000	176,688,000	3,603,000	1,875,000	2,992,000	9,225,000	42,571,915	17,067,000	40,240,563	14,285,000
1936[p]	61,471,172	1,097,640,000	150,000	1,482,000	215,578,060	3,579,000	2,000,000	3,080,400	9,598,600	42,217,900	17,541,600	40,368,183	14,850,000
All Years through 1936	722,335,348	18,690,025,719	2,467,718	38,074,770	3,595,399,967	247,106,251	71,756,035	34,292,441	263,839,965	726,140,436	205,054,455	1,817,314,908	152,369,000

[a] Figures beginning with this year are shown in nearest thousand barrels, being from *Mineral Resources* of 1930 and 1931; and from *Minerals Yearbook*
[p] No more data available.
[c] Year ended September 30.

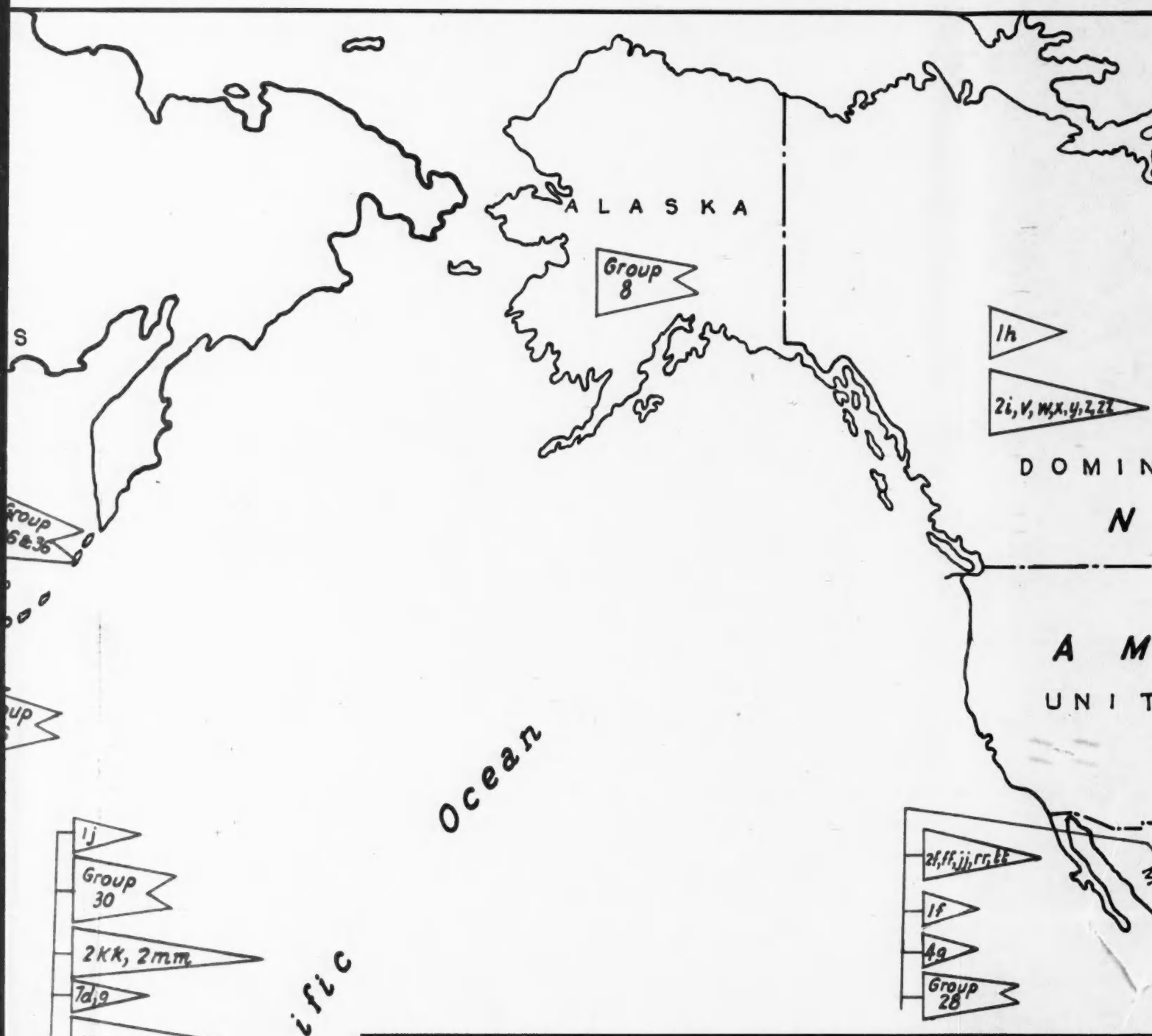


Resources, 1918, have been replaced here by figures from later reports, in cases where revisions have been made.)

Peru	Mexico	Argentina	Trinidad	Egypt	Iran (Persia)	British Borneo (Sarawak and Brunei)	Algeria	Ecuador	Venezuela	France	England	Czecho-slovakia	Sakhalin	Colombia	Iraq	Bo
0,127,000	64,121,000	8,630,000	5,380,000	1,267,000	39,688,000	4,943,000	8,000	537,000	63,134,000	504,000	2,000	112,000	440,000	15,014,000	[a]338,000	...
2,006,000	50,151,000	9,070,000	7,684,000	1,842,000	43,461,000	[d]5,223,000	8,000	1,084,000	105,749,000	512,000	1,000	94,000	677,000	19,897,000	713,000	...
3,422,000	44,688,000	9,391,000	8,716,000	1,868,000	42,145,000	5,290,000	20,000	1,381,000	137,472,000	535,000	[p]	93,000	[c]1,134,000	20,385,000	798,000	
2,449,000	39,530,000	9,002,000	9,419,000	1,996,000	45,833,000	4,907,000	16,000	1,553,000	136,669,000	523,000	[e]	157,000	[c]1,805,000	20,346,000	909,000	[a]5
0,089,000	33,039,000	11,709,000	9,744,000	2,038,000	44,376,000	3,854,000	[p]	1,762,000	116,613,000	527,000	[p]	134,000	2,734,000	18,237,000	900,000	2
9,899,000	32,805,000	13,139,000	10,126,000	1,895,000	49,471,000	3,796,000	[p]	1,597,000	116,541,000	530,000	[p]	126,000	2,631,000	16,414,000	836,000	4
3,257,000	34,001,000	13,691,000	9,561,000	1,663,000	54,392,000	4,490,000	[p]	1,620,000	117,720,000	562,000	[p]	122,000	2,338,000	13,158,000	917,000	3
5,314,000	38,172,000	14,024,000	10,894,000	1,546,000	57,851,000	5,140,000	[p]	1,637,000	136,103,000	557,000	[p]	178,000	2,881,000	17,341,000	7,689,000	15
7,067,000	40,240,563	14,285,000	11,678,637	1,274,000	57,304,000	5,000,000	[p]	1,731,882	151,522,000	535,000	[p]	200,000	2,857,000	17,597,655	27,014,900	16
7,541,600	40,368,183	14,850,000	13,022,000	1,231,700	57,363,600	4,597,000	[p]	1,851,600	165,452,400	532,120	[p]	185,000	2,851,000	20,512,800	29,405,815	16
5,054,455	1,817,314,908	152,369,001	128,846,028	30,792,700	710,286,600	72,944,000	143,000	15,672,482	1,321,786,400	9,183,120	20,000	2,190,000	20,714,000	187,613,455	69,520,715	71

and 1931; and from *Minerals Yearbook* in subsequent years.

[d] Beginning of production from Brunei.
[e] Less than one thousand barrels.
[p] For 1935 and 1936 figures for countries outside the United States are preliminary, having been estimated by The OIL WEEKLY, with aid of governm



LEGEND

The principal operating companies in different countries *(outside the United States)* are indicated by flags. The letters within the flags represent the name of the company or companies, and are explained below:

1. STANDARD OIL COMPANY OF CALIFORNIA
- a. Bahrein Petroleum Company, Ltd.
- b. California Arabian Standard Oil Company.
- c. California Standard Oil Company of Mexico.
- d. N.V. Nederlandsche Pacific Petroleum Maatschappij.
- e. Richmond Petroleum Company of Colombia.
- f. Richmond Petroleum Company of Mexico, S. A.
- g. Richmond Petroleum Company of Venezuela.
- h. Standard Oil Company of British Colombia.
- i. California Standard Oil Company, Ltd.
- j. 20 percent interest in N.V. Nederlandsche Nieuw Guinea Petroleum Maatschappij held by Id.
- k. 50 percent interest in The California Texas Oil Company.

2. STANDARD OIL COMPANY OF NEW JERSEY
- c. Compagnie General des Petroles.
- d. Compagnie Standard Franco Americaine and subsidiaries.
- e. Compagnie Nacional de Petroleo, Ltd.
- s. Algemeene Exploratie Maatschappij is an affiliate of Royal Dutch Shell Combine.
- t. N.V. Oost-Borneo Maatschappij is a Shell affiliate.

5. BURMAH OIL COMPANY, LTD.
- a. Assam Oil Co., Ltd.
- b. The Tin Plate Company of India, Ltd.
- c. B.O.C. Anglo-Iranian Oil Share Trust, Ltd.
- d. Interest held in Anglo-Iranian Oil Company, Ltd.
- e. Interest held in Burmah Shell Oil Storage Distributing Company of India.
- f. Interest held in Shell Trading & Transport Company, Ltd.

6. ANGLO IRANIAN OIL COMPANY, LTD.
- a. D'Arcy Exploration Company, Ltd.
- aa. North Iranian Oils, Ltd., Sub. of 6a.
- b. Kermanshah Pet. Co.
- c. Khanaquin Oil Company, Ltd.
- d. Kuwait Oil Company, Ltd., owned jointly with Gulf.
- e. Stenu Romana, Ltd.
- f. Iraq Petroleum Company (6 holds 23¾ percent interest through 6a).
- g. Anglo-Iranian Oil Company.

GROUP 19, includes:
Methan Spolecnost pro teabu Plynu; Apollo Rafinerie Mineralnich Oleju; Czechoslovakia Republic; Stat. Naft. Doly.

GROUP 20, includes:
Anglo-Ecuadorean Oilfields, Ltd.; Ecuador Oilfields, Ltd.

GROUP 21, includes:
Compagnie Francaise des Petroles; Pechelbronn Oil Co.

GROUP 22, includes:
Bohrverwaltung; Schachtbau Thyssen, G.m.b.H.

GROUP 23, includes:
J. D. Celaltis.

GROUP 24, includes:
Attock Oil Company; British Burmah Petroleum Co.; Indo-Burma Oilfields, Ltd.; Pyinna Development Co.

GROUP 25, includes:
Azienda Generale Italiana Petroli; Societa Petrolifera Italiana.

GROUP 26, includes:
Nippon Oil Co.; Nihon Sekiyu Kaisha;

Iraq	Bolivia	Bahrein Island	Other Countries	Total World	Percent Produced by United States	YEAR
338,000	.....	.....	13,000	1,262,582,000	71	1927
713,000	.....	.....	15,000	1,324,774,000	68	1928
798,000	.....	.....	38,000	1,485,867,000	68	1929
909,000	e56,000	.....	40,000	1,411,905,000	64	1930
900,000	25,000	.....	54,000	1,373,656,000	62	1931
836,000	44,000	.....	62,000	1,309,677,000	60	1932
917,000	31,000	31,000	71,000	1,442,112,000	63	1933
389,000	159,000	285,000	96,000	1,522,243,000	59.7	1934
014,900	163,380	1,264,800	102,000	1,641,030,732	60.5	.....1935r
405,815	160,000	3,400,000	108,000	1,810,229,950	60.6	.....1936r
520,715	719,380	4,980,800	1,220,000	29,142,809,694	64.1	All Years ...through 1936

aid of government and other sources.

GREENLAND

JAN MAYEN

ICELAND

WEST SPIT

BAFFIN ISLAND

SOUTHAMPTON

NEWFOUNDLAND

CAPE BRETON Is.

MINION OF CANADA

NORTH

MERICA

NITED STATES

Atlantic

Ocean

MEXICO

CUBA

WEST INDIES

HAITI

JAMAICA

BR. HONDURAS

GUAT.

HOND.

SALVADOR

NICARAGUA

COSTA RICA

PANAMA

TRINIDAD

VENEZUELA

COLOMBIA

GUIANA

ECUADOR

PERU

SOUTH AMERICA

BRAZIL

BOLIVIA

FRANCE

SPAIN

PORTUGAL

CORSICA

SARDIN

MOROCCO

ALGERIA

RIO DE ORO

FRENCH WEST AFRICA

FRENCH SUDAN

SENEGAL

UPPER VOLTA

IVORY COAST

(Br.) GOLD CST.

DAHOMEY

NIGERIA

SIERRA LEON

LIBERIA

CAMERO

KABINDA

IRISH FREE STATE

GREAT BRITAIN

NETH.

BELG.

Group 15

Group 18

Group 17

Group 20

Group 32

Group 22

Group 19

Group 14

Group 21

Group 29

Group 40

Group 43

Group 37

Group 33

Group 35

Group 10

2o

76, h

2g

4,4p

6,6l

3d

2t

7f

2j

2j

2r

2n

4cc

2g, h, u

1g

4d, f, m

1t

2p

6,6ai

1z

4n

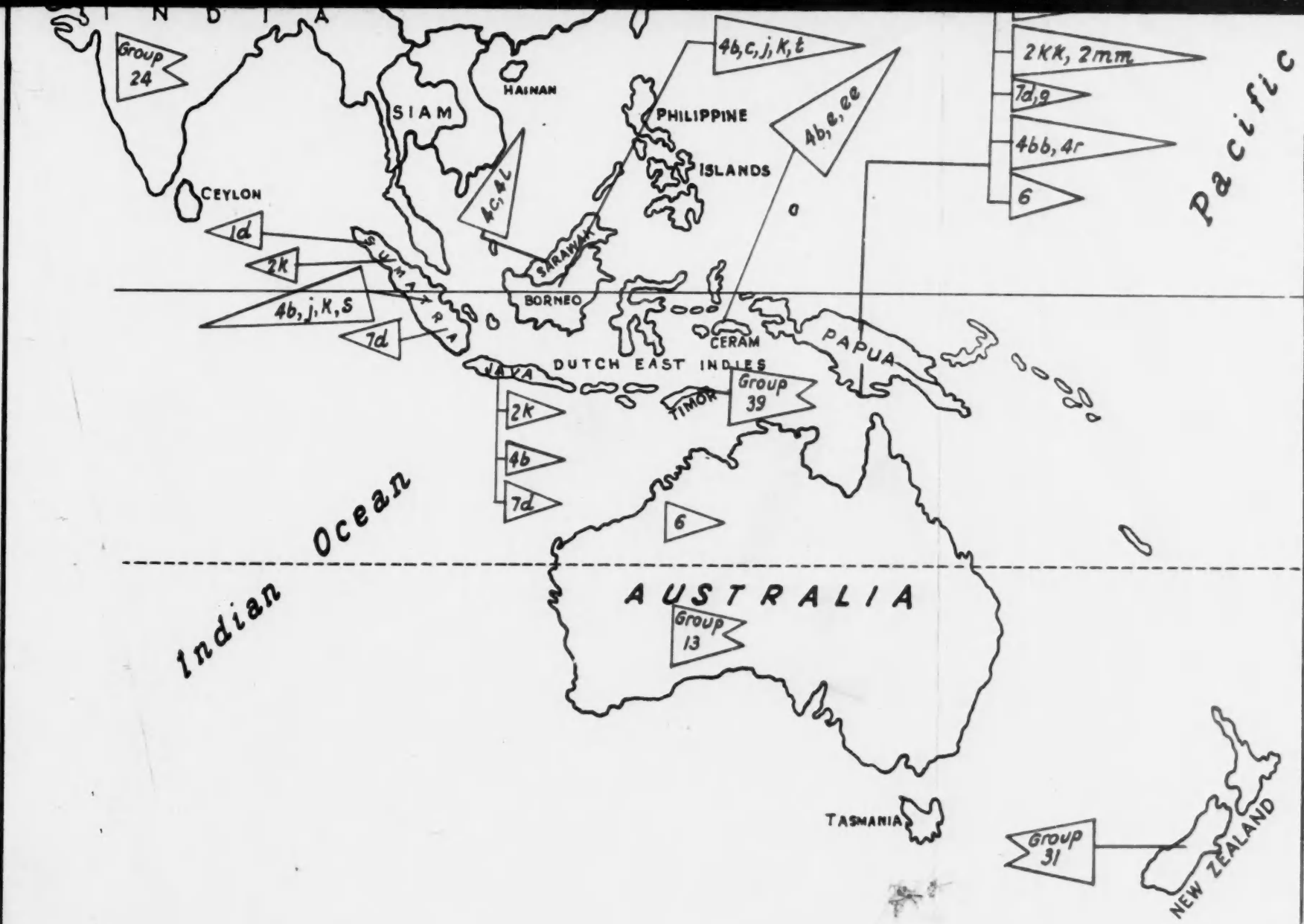
7e

2d

SVALBARD
KING
WEST SPITSBERGEN
SOUTH CAPE
LAND
2m
4a
6e
Group
2o
76, h
Group 33
Group 35
JAN MAYEN
ICELAND
NORWAY
SWEDEN
FINLAND
Group 38
ESTONIA
LATVIA
LITH
1i
2p
6,68i
299
4,4p
6,6l
Group 19
IRISH FREE STATE
GREAT BRITAIN
NETH
BELG
GERMANY
POLAND
Group 22
1z
4n
7e
Group 14
2d
Group 21
FRANCE
CZECHOSL
AUSTR
HUNG
ROMANIA
YUGO SLAVIA
BULGARIA
Group 45
Group 37
SPAIN
CORSICA
SARDIN
Group 23
SICILY
GREECE
Group 29
Mediterranean Sea
MOROCCO
ALGERIA
Group 10
BYA
EGY
40
RIO DE ORO
h, u
f, m
FRENCH WEST AFRICA
FRENCH SUDAN
SENEGAL
UPPER VOLTA
NIGERIA
IVORY COAST
(Br.) GOLD CST.
DAHOMEY
SIERRA LEON
LIBERIA
CAMEROONS
EQUATORIAL AFRICA
AFRICA
FRENCH
BELGIAN
KABINDA
CONGO
ANGOLA
SOUTHWEST
(Br.) NORTH
Group 11
Ocean

KING CHARLES IS.
Barents Sea
UNION OF SOCIALISTIC SOVIET REPUBLICS
(R U S S I A)
ASIA
TURKESTAN
FINLAND
ROMANIA
BULGARIA
TURKEY
ASIA MINOR
SYRIA
IRAQ
PERSIA
AFGHANISTAN
BALUCHISTAN
INDIA
EGYPT
ARABIA
ANGLO-EGYPTIAN SUDAN
ETHIOPIA
BR. SOMALI'D
ITALIAN SOMALILAND
KENYA
Arabian Sea
BAHREIN ISLAND
BELGIAN CONGO
TANGANYIKA TERRIT (Br.)
(Br.) NORTH RHODESIA
NYASALAND
MOZAMBIQUE
SOUTH RHODESIA (Br.)
MADAGASCAR
Indian Ocean
Group 41
Group 23
6,6b
3c
5d
1a,b
4o
12,5,k
3d
6,6d
1a,b
3b,c,d
2l
4,4i,q
6,6a,c
7c

N
Group
24



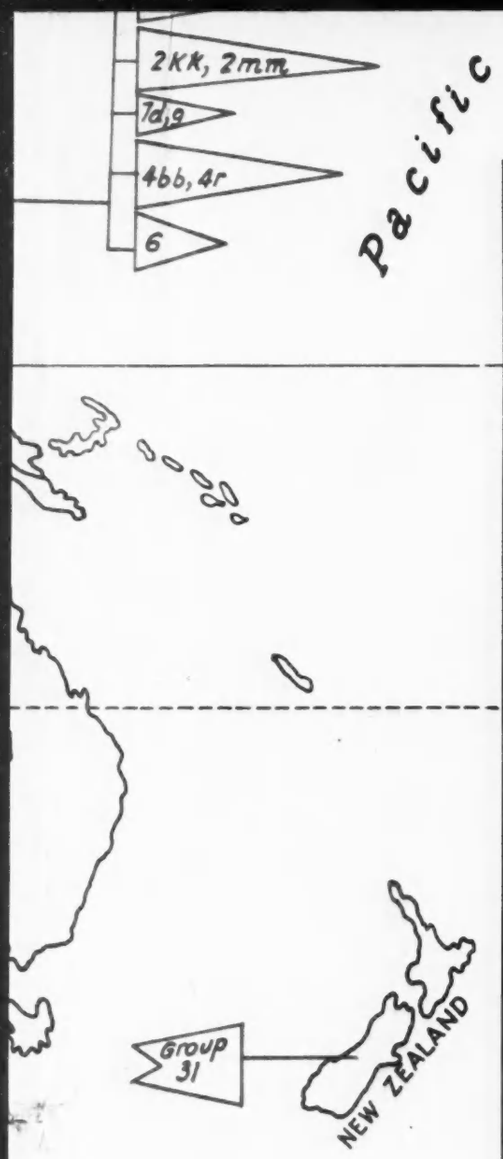
The principal ope
by flags. The lett
explained below:

1. STANDARD OIL CO
CALIFORNIA
a. Bahrein Petroleum Co
b. California Arabian St
pany.
c. California Standard
Mexico.
d. N.V. Nederlandsche
Maatschappij.
e. Richmond Petroleum
Colombia.
f. Richmond Petroleum
ico, S. A.
g. Richmond Petroleum
ezuela.
h. Standard Oil Compan
Colombia.
i. California Standard O
j. 20 percent interest in
sche Nieuw Guinea
schappij held by
k. 50 percent interest
Texas Oil Company.

2. STANDARD OIL CO
NEW JERSEY
c. Compagnie General d
d. Compagnie Standard
caine and subsidiar
e. Compania Nacional d
f. Compania Transcontin
S. A.
ff. Mexican Petroleum C
g. Creole Petroleum Co
gg. Deutsche Amerikan
Gesellschaft.
h. Standard Oil Compan
i. Imperial Oil Compan
j. International Petrole
jj. Huasteca Petroleum
k. N.V. Nederlandsche
leum Maatschappi
kk. Half owner of Stand
pany in Far East.
l. Near East Developm
m. Romano Americana.
mm. Half interest in 4
Nederlandsche Nie
leum Maatschappij
n. Societa Italo Americ
and subsidiaries.
nn. Trinidad Oilfields O
Ltd.
o. Standard Nobel Com
p. Standard Oil & Ren
q. Standard Oil Compan
r. Standard Oil Compan
rr. Tamiahua Petroleum
s. Standard Oil Compan
t. Tropical Oil Compan
tt. Tuxpan Petroleum C
u. Lago Petroleum Cor
v. Dalhousie, Ltd.
w. Foothills Oil & Gas
x. Northwest Company
y. Royalite Oil Compan
z. European Gas & Ele
zz. Southwest Petroleu

3. THE TEXAS CORP
a. South American G
jointly controlled
um Corporation.
b. Bahrein Petroleum C
terest).
c. California Arabian S
pany (Half Intere
d. 50 percent interest
Texas Oil Compan
e. Owns 50 percent in
Oil Company of
parent company
tion, which has
in practically all

4. ROYAL DUTCH SH
Composed of: Shell Tr
ing Company, Ltd., and
pany for the Working
in the Netherlands Ind
inklijke Nederlandsche
Exploitatie Van Pet
Nederlandsche-Indie.
a. Astra Romana (Rou
b. De Batnafsche Petro
bb. N.V. Nederlandsche
troleum Maatschap
terest held by 4b
c. British Malayan Pe
cc. United British Oil
Ltd.
d. Caribbean Petroleum
e. Ceram Oil Syndicat
leased to Royal D
ee. N.V. Boela Petrole
f. Colon Oil Corp.
g. Compania Mexicana
Aguila", S. A.
h. Diadema, S. A.
i. Iraq Petroleum Co
percent interest t
j. N.V. Tarakan Petro
k. Nederlandsche-Indis
schappij.
l. Sarawak Oilfields,
m. Venezuelan Oil Co
n. Half owner Austrian
ation Company.
o. Anglo-Egyptian Oil
p. Rhenania-Ossag Mi
q. Anglo-Saxon Petrol
r. Pagura Oil Develop
affiliate of Shell



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e. Richmond Petroleum Company of Colombia.
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g. Richmond Petroleum Company of Venezuela.
h. Standard Oil Company of British Colombia.
i. California Standard Oil Company, Ltd.
j. 20 percent interest in N.V. Nederlandsche Nieuw Guinea Petroleum Maatschappij held by Id.
k. 50 percent interest in The California Texas Oil Company.

2. STANDARD OIL COMPANY OF NEW JERSEY

c. Compagnie General des Petroles.
d. Compagnie Standard Franco Americaine and subsidiaries.
e. Compania Nacional de Petroleo, Ltd.
f. Compania Transcontinental de Petroleo, S. A.
ff. Mexican Petroleum Company.
g. Creole Petroleum Corporation.
gg. Deutsche Amerikanische Petroleum Gesellschaft.
h. Standard Oil Company of Venezuela.
i. Imperial Oil Company, Ltd.
j. International Petroleum Company.
jj. Humstera Petroleum Company.
k. N.V. Nederlandsche Koloniale Petroleum Maatschappij.
kk. Half owner of Standard Vacuum Company in Far East.
l. Near East Development Corporation.
m. Romano Americana.
mm. Half interest in 40 percent of N. V. Nederlandsche Nieuw Guinea Petroleum Maatschappij through 2kk.
n. Societa Italo Americana del Petrolio and subsidiaries.
nn. Trinidad Oilfields Operating Company, Ltd.
o. Standard Nobel Company.
p. Standard Oil & Refining Company.
q. Standard Oil Company of Argentina.
r. Standard Oil Company of Bolivia.
rr. Taminhua Petroleum Company.
s. Standard Oil Company of Peru.
t. Tropical Oil Company.
tt. Tuxpan Petroleum Company.
u. Lago Petroleum Corporation.
v. Dalhousie, Ltd.
w. Foothills Oil & Gas Company, Ltd.
x. Northwest Company, Ltd.
y. Royalite Oil Company, Ltd.
z. European Gas & Electric Company.
zz. Southwest Petroleum, Ltd.

3. THE TEXAS CORPORATION

a. South American Gulf Oil Company, jointly controlled with Socony-Vacuum Corporation.
b. Bahrein Petroleum Company (Half Interest).
c. California Arabian Standard Oil Company (Half Interest).
d. 50 percent interest in the California Texas Oil Company.
e. Owns 30 percent interest in Seaboard Oil Company of Delaware, which is parent company of Inland Exploration, which has exclusive concession in practically all of Afghanistan.

4. ROYAL DUTCH SHELL COMBINE

Composed of: Shell Transport and Trading Company, Ltd., and Royal Dutch Company for the Working of Petroleum Wells in the Netherlands Indies, or N. V. Koninklijke Nederlandsche Maatschappij Tot Exploitatie Van Petroleumbronnen in Nederlandsche-Indie.

a. Astra Romana (Roumanian).
b. De Bataafsche Petroleum Maatschappij.
bb. N.V. Nederlandsche Nieuw Guinee Petroleum Maatschappij (40 percent interest held by 4b).
c. British Malayan Petroleum Company.
cc. United British Oilfields of Trinidad, Ltd.
d. Caribbean Petroleum Company.
e. Ceram Oil Syndicate, Ltd., Properties leased to Royal Dutch.
ee. N.V. Boela Petroleum Maatschappij.
f. Colon Oil Corp.
g. Compania Mexicana de Petroleo "El Aguila", S. A.
h. Diadema, S. A.
i. Iraq Petroleum Company, holds 23¾ percent interest through 4q.
j. N.V. Tarakan Petroleum Maatschappij.
k. Nederlandsche-Indische Aardolie Maatschappij.
l. Sarawak Oilfields, Ltd.
m. Venezuelan Oil Concessions, Ltd.
n. Half owner Austrian Crude Oil Exploitation Company.
o. Anglo-Egyptian Oilfields, Ltd.
p. Rhenania-Ossag Mineralolwerke.
q. Anglo-Saxon Petroleum Company, Ltd.
r. Papua Oil Development Company is an affiliate of Shell.
s. Algemeene Exploratie Maatschappij is an affiliate of Royal Dutch Shell Combine.
t. N.V. Oost-Borneo Maatschappij is a Shell affiliate.

5. BURMAH OIL COMPANY, LTD.

a. Assam Oil Co., Ltd.
b. The Tin Plate Company of India, Ltd.
c. B.O.C. Anglo-Iranian Oil Share Trust, Ltd.
d. Interest held in Anglo-Iranian Oil Company, Ltd.
e. Interest held in Burmah Shell Oil Storage Distributing Company of India.
f. Interest held in Shell Trading & Transport Company, Ltd.

6. ANGLO IRANIAN OIL COMPANY, LTD.

a. D'Arch Exploration Company, Ltd.
aa. North Iranian Oils, Ltd., Sub. of 6a.
b. Kermanshah Pet. Co.
c. Khanaquin Oil Company, Ltd.
d. Kuwait Oil Company, Ltd., owned jointly with Gulf.
e. Steau Romana, Ltd.
f. Iraq Petroleum Company (6 holds 23¾ percent interest through 6a).
g. Anglo-Iranian Oil Company.
h. Anglo-Iranian Oil Compa.ny.
i. Scottish Oils, Ltd. (shale oil production).
j. Compania Industrial y Comercial de Petroleo, S. A.
k. British Borneo Petroleum Syndicate is an associate.
l. Nordic Oil Company jointly controlled with British Borneo Petroleum Syndicate.

7. SOCONY-VACUUM OIL COMPANY, INC.

a. Deutsch Vacuum Oel, A.G., Hamburg.
b. Vacuum Oil Company, S.A. Czechowice.
c. Near East Development Corp. (11⅛ interest in Iraq Pet. Co.)
d. Half owner of Standard Vacuum Company in Far East, combining marketing business of Socony-Vacuum with Far East production of S. of N. J.
e. Half owner of Austrian Crude Oil Exploitation Company.
f. South American Gulf Oil Company, jointly controlled with The Texas Co.
g. Islands Exploration Company, Ltd.
h. Pioneer Oil Company (Poland) part interest held by Socony Vacuum Corp.
i. Half interest in N.V. Nederlandsche Nieuw Guinee Petroleum Maatschappij through 7d.

GROUP 8, includes:
Chilkat Oil Company; Iniskin Drilling Company.

GROUP 9, includes:
Azienda Generale Italiana Petroli, Syndicat Franco-Albanais; Azienda Italiana Petrolia Albania.

GROUP 10, includes:
Societe Algerienne de Petroles de Tlounnet.

GROUP 11, includes:
Compania de Petroleo de Angola.

GROUP 12, includes:
Argentine Government Oil Fields (Y.P.F.); "Astra" Cia Compania de Petroleo, S. A.; Ultramar, S. A. Pet. Argentina.

GROUP 13, includes:
South Australian Oil Wells Co.; Oil Search, Limited & sub, Drillers, Ltd.; Western Petroleum, N. L.; C. O. Shave; Australian Roma Oil Co.; Roma Oil Corp.; Freney-Kimberley Oil Co.; Belford Dome, Ltd.

GROUP 14, includes:
Rohoel Gewinnungs, A. G.

GROUP 15, includes:
Abasand Oils, Ltd; Ajax Oil & Gas Co., Ltd.; Altoba Gas Exploration Co., Ltd.; British Dominion Oil & Development Corp.; Calgary & Edmonton Corporation; Canadian Natural Gas Syndicate; Central Butte Exploration Drillers; Colony Oil & Gas Co.; Dominion Petroleum Company; Gas & Oil Products, Ltd.; Hargal Oils, Ltd.; B. Jasperson; Lloydminster Gas Co., Ltd.; Mar Jon Oil Co.; Maxmont Oil Co.; Petrol Oil & Gas Co., Ltd.; Riverhurst Oil & Gas Co., Ltd.; S. W. S. Drilling Co., Ltd.; Charles A. Simpson; Southern Ontario Gas Co., Ltd.

GROUP 16, includes:
Chinese Government.

GROUP 17, includes:
Colombian Petroleum Company.

GROUP 18, includes:
Compania Minera San Elias, S. A.; Motembo Mining Co., S. A.; Union Oil Co., S. A.; Atlantic Refining Co. of Cuba; Compania Naptalifera El Rosario; S.A.; The St. John Naphtha Co., Inc.

GROUP 19, includes:
Methan Spolecnost pro tezbu Plynu; Apollo Rafinerie Mineralnich Oleju; Czechoslovakia Republic; Stat. Naft. Doly.

GROUP 20, includes:
Anglo-Ecuadorean Oilfields, Ltd.; Ecuador Oilfields, Ltd.

GROUP 21, includes:
Compagnie Francaise des Petroles; Pechelbronn Oil Co.

GROUP 22, includes:
Bohrverwaltung; Schachtbau Thyssen, G.m.b.H.

GROUP 23, includes:
J. D. Cehalis.

GROUP 24, includes:
Attock Oil Company; British Burmah Petroleum Co.; Indo-Burma Oilfields, Ltd.; Pyinna Development Co.

GROUP 25, includes:
Azienda Generale Italiana Petroli; Societa Petrolifera Italiana.

GROUP 26, includes:
Nippon Oil Co.; Nihon Sekigu Kaisha; North Sakhalin Oil Co.; Taiwan Mining Co., Ltd.

GROUP 27, includes:
Compagnie Francaise des Petroles.

GROUP 28, includes:
Anglo-Mexican Petroleum Company; Compania de Gas y Combustible Imperio; Compania Mexicana de Gas, S. A.; Compania de Petroleo Mercedes, S. A.; Compania Petrolera M y M, S. A.; Continental Oil Co. of Mexico, S. A.; Guaranty Oil Co., S. A.; Mexican Gulf Oil Co.; Mexican Sinclair Pet. Co.; New England Fuel Oil Co.; Ohio Mexico Oil Co.; Pan American Petroleum Company; Penn Mex Fuel Co.; Petroleos de Mexico, S. A. (Petromex); Sabalo Transportation Co.; Sheldon-Burden of Mexico, S. A.; Thomas Williams, Jr.

GROUP 29, includes:
Chantiers, B.R.P.M.; Societe Cherifienne des Petroles.

GROUP 30, includes:
Oil Search Limited.

GROUP 31, includes:
Moruroa Oil Fields, Ltd.; Taranaki Petroleum Company; Blenheim Company.

GROUP 32, includes:
Compania Petrolera Lobitos (Lobitos Oilfields, Ltd.); F. G. Piaggio & Sons.

GROUP 33, includes:
Galicia Oil Co.; Gazy Ziemne O. & N. Gas Co., Ltd.; Malopolska Oil Co.; "Pioneer" Bituminous Minerals Exploring and Exploiting Co., Ltd.; Polmin Oil Co.; Schmer Oil Co.; C. Zalnski.

GROUP 34, includes:
Inyamingo Petroleum, Ltd.

GROUP 35, includes:
Colombia Soc. Franco Roumaine de Petrole; Concordia Oil Company; Credital Minier, S.A.R.; Industria Romana de Petrol; S.A.R. de Gas Metan (Fosta U.E.C.); Unireu Soc. Anon. Romana de Petrol.

GROUP 36, includes following oil trusts:
Aneftesavody; Bashleft; Embaneft; Ginyneft; Groxneft; Maineft; Middle Asiatic Petroleum Trust; Sokolien-Neft; Wostokneft.

GROUP 37, includes:
Spanish Petroleum Monopoly is known as Compania Arrendataria Del Monopolio de Petroles, S. A. ("Campsa"); Compania Espanolas des Petroleos.

GROUP 38, includes:
Aktieboinget Electrisk Malmletning.

GROUP 39, includes:
Timor Petroleum Company.

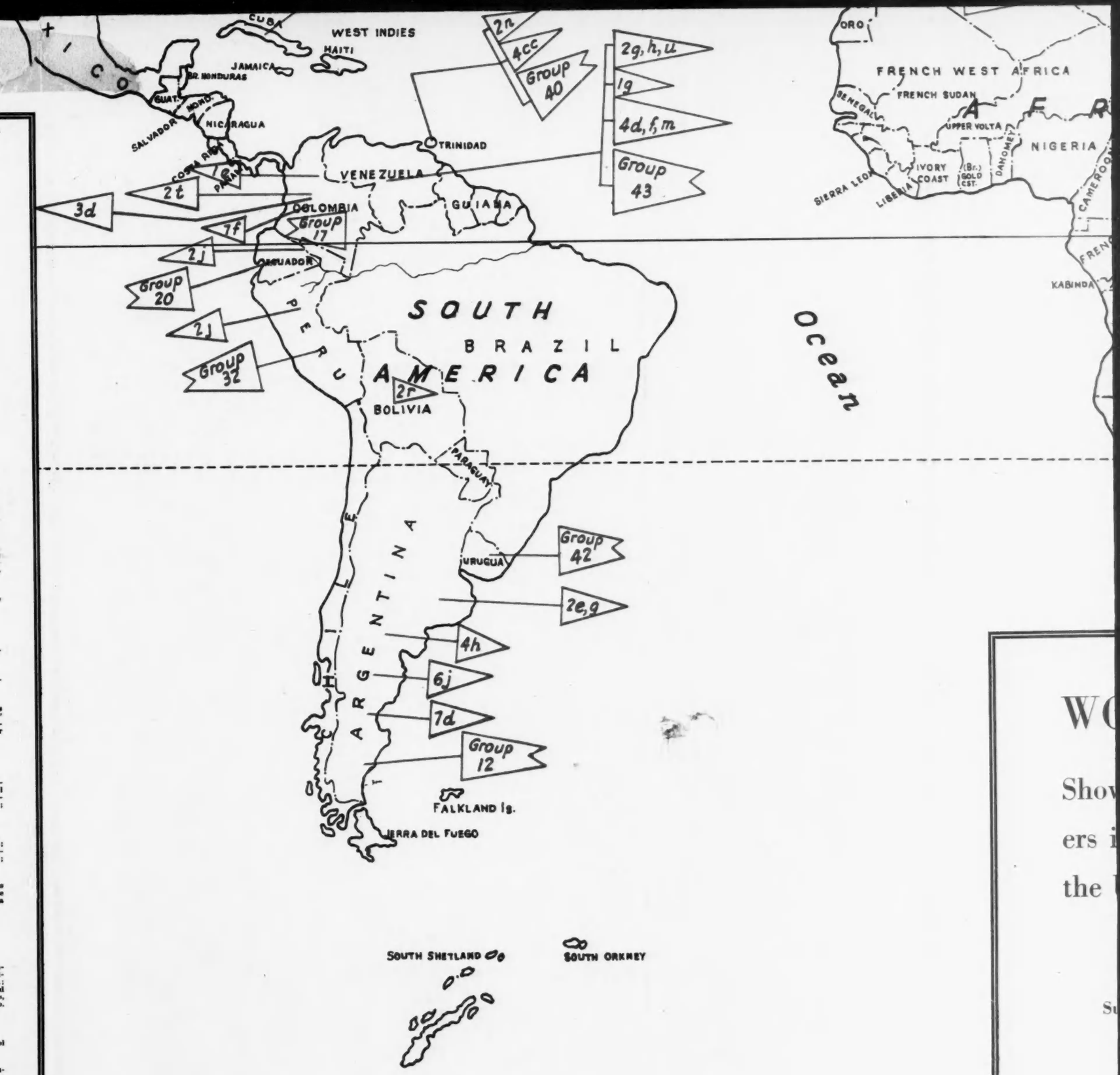
GROUP 40, includes:
Antilles Petroleum Company; Apex (Trinidad) Oilfields, Ltd.; Kern Trinidad Oilfields, Ltd.; New Dome Oilfields, Ltd.; Trinidad Central Oilfields, Ltd.; Trinidad Investments, Ltd.; Trinidad Leaseholds, Ltd.; Trinidad Petroleum Development Co.

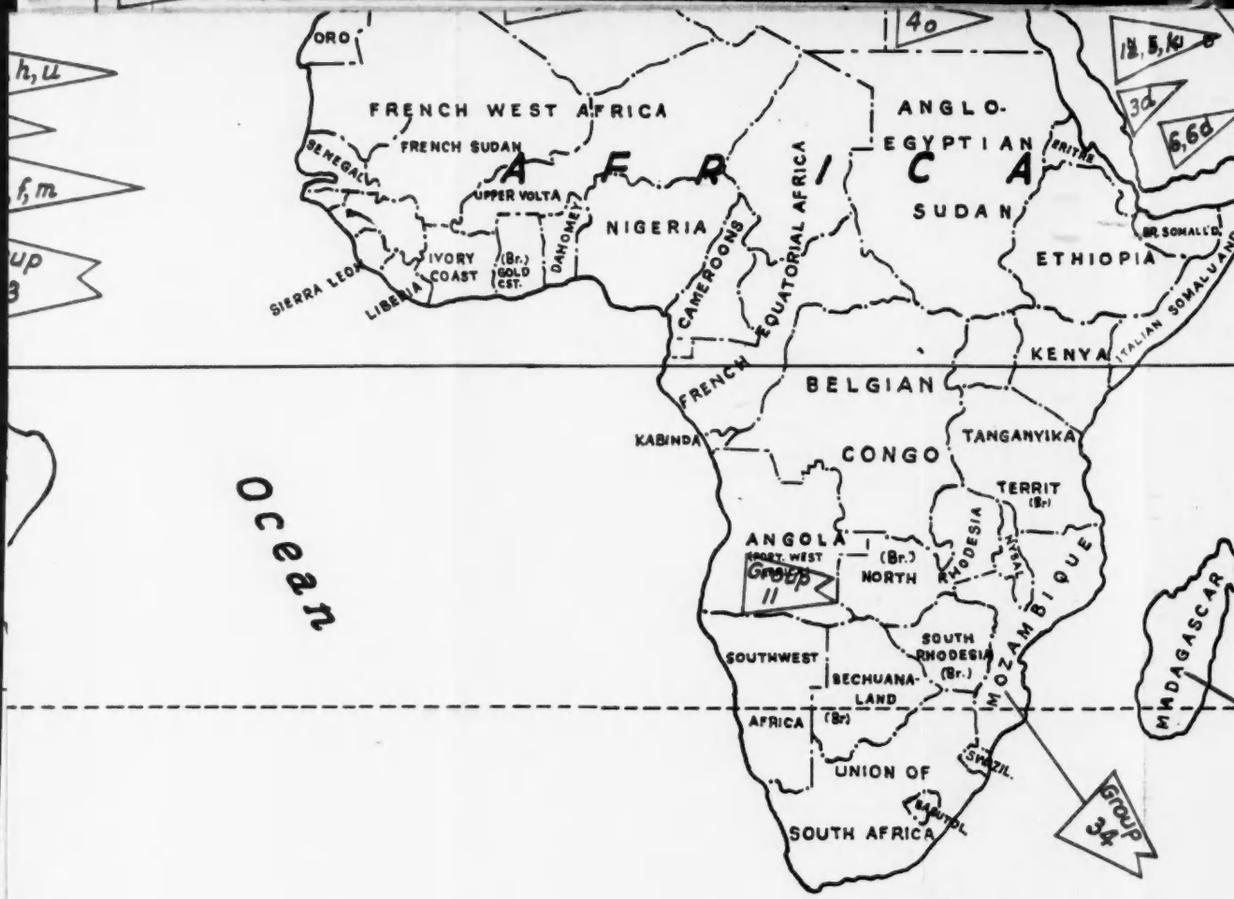
GROUP 41, includes:
Enstitusu Petrol Arama Gurubu.

GROUP 42, includes:
Admn. Nacional de Combustibles, Alcohol y Portland.

GROUP 43, includes:
Caracas Petroleum Corporation; Venezuelan Gulf Oil Company; Venezuela Petroleum Company.

GROUP 44, includes:
Autonomous Management of Monopolies of Yugoslavia.

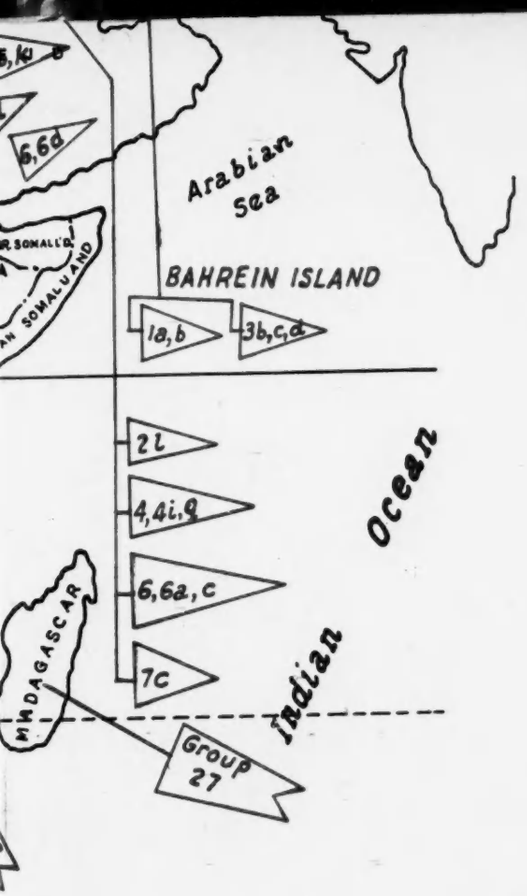

CUBA
WEST INDIES
HAITI
JAMAICA
BR. HONDURAS
GUAT.
HOND.
SALVADOR
NICARAGUA
COSTA RICA
PANAMA
TRINIDAD
VENEZUELA
GUIANA
COLOMBIA
ECUADOR
PERU
BRAZIL
SOUTH AMERICA
BOLIVIA
PARAGUAY
URUGUA
ARGENTINA
CHILE
FALKLAND Is.
TERRA DEL FUEGO
SOUTH SHETLAND
SOUTH ORKNEY
Ocean
2n
4cc
Group 40
2g, h, u
1g
4d, f, m
Group 43
3d
2t
7f
Group 17
2j
Group 20
2j
Group 32
2r
Group 42
2e, g
4h
6j
7d
Group 12
ORO
FRENCH WEST AFRICA
FRENCH SUDAN
SENEGAL
UPPER VOLTA
NIGERIA
SIERRA LEON
LIBERIA
IVORY COAST
(Br.) GOLD CST.
DAHOMEY
CAMEROO
KABINDA



WORLD OIL MAP

Showing principal leaseholders in all countries outside the United States

Supplement to The OIL WEEKLY
February 22, 1937


Arabian
Sea
BAHREIN ISLAND
1a,b
3b,c,d
2l
4,4i,9
6,6a,c
7C
Indian
Ocean
MADAGASCAR
Group
27

AP

old-
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The
OIL WEEKLY
MARCH 5, 1984

"ASLEEP IN THE DEEP"

New Mattress Material is Typical Example of Goodrich Development

MATTRESS manufacturers faced a tough problem for years. They wanted to make their better grades without humps or tufts—but there was no satisfactory material for bridging the gaps between springs. Pads of inelastic material finally lost their shape, allowed the cotton to shift about, resulted in discomfort.

Goodrich Application Engineers developed a method of weaving hair into loops, and dipping them in latex—first form of rubber. The result—called Nukraft—is upholstery with no tufts nor bumps but, instead, *permanent comfort.*

Makers of mattresses, furniture, automobiles, theatre seats seized upon this new Goodrich invention. Their sales leaped—because people will always pay for comfort.

Whether you make mattresses or motor boats, arm chairs or airplanes, the story of Nukraft is important to you. It illustrates the ability and aggressiveness of Goodrich engineers in developing new properties, new improvements in rubber, and putting them to practical use for industry.

All the skill in compounding, testing, manufacturing rubber products—gained in these special applications—is available *and used* to make Highflex Transmission Belting, Longlife Conveyor Belting, Type 50 Air Hose and every other Goodrich product a *better value.* The B. F. Goodrich Company, Mechanical Rubber Goods Division, Akron, Ohio.

Goodrich

ALL *products problems* IN RUBBER